

**The Study of Value:
Social, Economic and Political Dimensions of Palace
Complexes at El Zotz**

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I, Ewa Czapiewska-Halliday, confirm that the work presented in this thesis is my own.

Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

The concentration of wealth and resources under the control of a privileged few – the elites – has shaped the ways we perceive modern societies and the ways we study ancient states. Elite groups feature prominently within the archaeological research of ancient Maya societies, not least because of the monumental architecture associated with them and the glyphic inscriptions providing us with their names and titles. The growth of an elite class through time led to the emergence of multiple elite households coexisting, sharing, and competing for the political powers within ancient Maya polities.

This thesis investigates the dimensions and relationships among various elite households excavated at the ancient Maya site of El Zotz, Petén, Guatemala. The key facets of the social, economic and political networks at the site are identified through trends in consumption behaviour by five different populations through time. Theories of value underpinning the current work state that various types of objects carried different ‘values’ which ultimately affected the ways these objects were distributed within societies, and determined which population groups were granted access to distribution networks.

The consumption behaviour of elites and the distribution networks at El Zotz are investigated through the study of ceramic remains. Typological and modal analyses of El Zotz pottery employed in the current research highlight the extent to which limited access to goods existed within ancient Maya societies. Multiple lines of quantitative, statistical and qualitative analysis of El Zotz ceramics prove that various households at the site had access to the distribution networks of ‘high-value’ objects, but the accumulation of wealth across elite compounds changed through time. Therefore, the elite lineages of El Zotz experienced various socio-economic shifts, much like other sites in the Petén region, which affected their ability to accumulate wealth at different points in history.

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CHAPTER 1. Introduction to Research

Social differences are seen as a fundamental feature in the development of states or complex societies, dividing communities into the haves and the have-nots. The dynamics between the haves and the have-nots largely depended on the history of the region where they developed, the cultures of these societies and the socio-political strategies employed by the authority groups and their relationship with the general population. Recently in Britain it has been shown that economic inequality was directly influencing voting results, which had an impact on significant political changes of the year 2016. Survey results published by YouGov show there was a clear correlation between income levels and the way people voted in the historic ‘Brexit’ referendum in the United Kingdom (YouGov 2016); thus, it is clear that the *haves* within a society desire a different political outcome than the *have-nots*. The Gini Index compiled by the United Nations, which measures the distribution of equality within countries, showed an increase in inequality in many developed states, such as the United Kingdom or United States of America, over the past 50 years. This pattern is not, however, uniform throughout the world or through history, and some of the developed countries, such as Norway, show an increase in equality during that same time period. Thus, in order to understand the socio-economic and political dynamics within states it is crucial to take into account the individual histories of these states or their regions – social structures have to be set in time and space, and it has to be acknowledged that the intra-state dynamics probably changed multiple times throughout the state’s history.

Over the past few decades the studies of ancient Maya societies emphasised its previously neglected complexity. The new focus is to explore the multi-tiered nature of Maya societies and the evolution of the inequality between multiple socio-economic classes. Unfortunately, the arguments which advocate a more diverse ancient Maya

society rather than a two-tier one – the elites and the commoners – are often extremely difficult to illustrate with archaeological data. A social class, while it can be defined in strictly Marxist terms, is in here defined broadly as a population group categorised by a specific set of political, economic and social circumstance which determines this group's participation in society's activities and which is different to other groups' circumstances (Grant 2001, 161). Elites, as a social class in the context of ancient Maya societies, are here defined as a group or groups associated with superiority in wealth, social privilege and political power in relation to other social classes – the non-elites (Marcus 1983a, 3; Chase and Chase 1992, 3). My research focuses on retrieving information on socio-economic and political dynamics among different household groups of presumed elite status residing at one ancient Maya site of El Zotz using artefact data.

The typical recognisable architectural units in Maya centres are groups of buildings arranged around courtyards or open spaces. Where these buildings are residential, they are assumed to have been occupied by members of the same household (the same kin group and other related individuals, Houston and Inomata 2009, 49-51). The complexity of these architectural units – complexes – correlates with the size of the household, the wealth and the socio-political status of the population (Webster and Inomata 2004, 149-153; Houston and Stuart 2001). The varying complexity of household compounds (size, elevation, number of rooms, construction materials etc.) is how elite and non-elite presence is most often identified at different locations around Maya sites. El Zotz, an ancient Maya polity located in the Petén region of the Central Maya Lowlands (Figure 3.1, Figure 3.2), which forms the focus for the analysis presented here, is similar to most ancient Maya polities in its architecture. Mapping and excavation works carried

out at El Zotz revealed several locations, referred to as ‘complexes’, which were identified as potentially related to elites.

From the glyphic inscriptions and illustrations of court scenes on monuments and ceramic vessels (e.g. Martin and Grube 2000; Reents-Budet 1994), it is clear that Maya cities were ruled by kings who were surrounded by personnel of the royal court and a multitude of other individuals (Inomata 2001a). The social hierarchy of actors in these scenes is not always clear but sometimes can be deduced from their position relative to the ruler, the positions of their bodies, their hand gestures and the activity they are performing in the depicted scene (Maitland Gardner 2017). The fact that there were multiple architectural complexes associated with elite presence at El Zotz means that the city must have had a rich and vibrant political scene and multifaceted socio-economic relationships between household groups.

Shedding light onto this diverse community, and how it was transformed through time, lies at the heart of my research. Phase 1 of the El Zotz Archaeological Project under the direction of Dr Stephen Houston lasted from 2006 till 2011 with excavations carried out during field seasons 2008 to 2011. I began my work with the El Zotz Archaeological Project during the 2010 field season as a ceramicist and field laboratory supervisor. This was the year when the rich, unlooted royal tomb of the founder of the *Pa’ Chan* dynasty was discovered at El Diablo, one of the architectural complexes of El Zotz (Houston et al. 2015a, Newman 2011). Following this discovery, a great deal of archaeological and academic attention was focused on El Zotz, especially during the annual archaeological conference in Guatemala City (Simposio de Investigaciones Arqueológicas en Guatemala). Numerous members of the El Zotz Archaeological Project present the results of their respective research at this conference every year. A whole separate

volume dedicated to the royal tomb of El Diablo was also published in 2015 (Houston et al. 2015a).

The unique discoveries of elite activity at El Zotz did not stop at the royal tomb. Numerous examples of special artefacts and features (some bearing the emblem glyph of El Zotz), such as elaborate stucco masks (Taube and Houston 2015), mosaic earspools (Figure 1.7), stela fragment with readable glyphs (Figure 1.8), painted ceramics (Figure A.15), were all discovered at the site during the field seasons of the project. A great number of these artefacts were ceramic sherds and these objects directly linked to my analysis of ceramic assemblages from the site and sparked my interest in the topic of the current research. Each discovery contributed to our knowledge of Petén regional history, although we already knew it was turbulent, filled with war, conflict and strategic alliances (Martin and Grube 2000).

Much of the information we have about the history of Petén sites such as Tikal, Calakmul or Uaxactun comes from textual records. Many of the Maya sites of Petén are dotted with monumental art and stelae bearing the names of rulers and dates of special events. Having such detail of a site's history in the form of text provides archaeologists working at these sites with excellent context for their research and analysis. There are, however, very few textual records found at El Zotz or its neighbouring sites. Some details of the El Zotz dynastic sequence can be deduced from fragmentary inscriptions (Houston and Arredondo Leiva 2008, 181) but the bulk of our knowledge about the site stems from architectural and artefact analysis. Teams of archaeologists excavated different sectors of the site and the overall picture of El Zotz's history was then put together in the laboratory through a holistic approach to architecture and mapping, scientific analyses and artefact study. Ceramic analysis formed, therefore, one of the

key elements to understanding El Zotz transformations through time and its relations with other cities in the region.

The wealth of the ceramic material recovered during the excavations from 2008 to 2011 enabled the construction of a vast assemblage covering locations from numerous sectors of the site. Plenty of information about past populations can be retrieved from ceramic material and the abundance of pottery at El Zotz provided the crucial potential to unlock the histories of El Zotz communities. Such large artefact samples, however, (counted in thousands or tens of thousands) have to be analysed with appropriate strategies.

Since the beginning of my work in the Maya area I have been exposed to the type-variety method of ceramic classification (Smith et al. 1960). It is deep-rooted in the history of Maya archaeological research and it is still the most commonly used method of classifying Maya ceramics. The strengths of the type-variety classification system lie in its suitability for cross-site comparison of ceramic assemblages and its flexibility in creating and applying type-variety categories to many different samples. For many Maya ceramicists, hearing the name of a ceramic type creates an immediate understanding of the main features of the described vessel or sherd group. This understanding is much more difficult to replace with other methods of ceramic classification (for example the modal classification), which emphasises the local variations and pottery features. Many criticisms of the type-variety system have been published (for example, Pendergast 1979; Aimers 2013) and I do recognise its limitations. However, the type-variety classification provided one more significant advantage – the speed of work. Given the volume of ceramic material which I have sifted through, categorised, counted, weighed and recorded, a speedy classification solution was key for the success of my sampling. Additionally, the data could only be gathered in Guatemala as this is where all of the archaeological material was stored,

which further limited the time I had available for data collection. Some level of modal analytical classification was added to the research to enrich the sample with more detail; however, the type-variety system forms the core of my ceramic classification.

The multitude of architectural complexes at El Zotz, many of which contained features associated with the elite built environment, prompted the question of intra-site interactions among different household groups. The abundance of ceramic material recovered from many of the locations around El Zotz allowed me to enquire how the artefact assemblages integrated with different types of architecture and how these assemblages changed through time on a local level. The selection of architectural complexes for the current research was influenced by the locations and intensity of excavation works and the size of the buildings. Most of the excavation works focused on large architectural complexes which contained multiple masonry buildings, temples and numerous open spaces enclosed by the structures. Three of these large complexes were elected for my research as I was involved in a comprehensive classification and analysis of their ceramic samples for the project (samples from some of the other locations were analysed by other researchers). The selected complexes are located in very different areas of the site, which aids in the separation of the artefact assemblages (Figure 1.1). These complexes are: the Acropolis, El Diablo and Las Palmitas (Figure 1.2, Figure 1.3, Figure 1.4).

In order to investigate the potential class or status hierarchy at El Zotz, I also needed ceramic samples which potentially contrasted with the assemblages from the larger complexes. I selected assemblages from two smaller architectural groups, also located in different areas of the site (Figure 1.1), which exhibited different – lesser – levels of monumental architecture and showed little to no presence of elite-related features.

These complexes contain fewer structures, little to no masonry superstructures and

limited masonry architecture in general. The smaller complexes selected for my research are: El Tejón and Group K (Figure 1.5, Figure 1.6).

The total of the ceramic material analysed during the course of my research, originating from the five selected complexes, amounted to over 54,000 sherds and chronologically spanned from the Late Preclassic to Early Postclassic time periods (200 BC – AD 1250). Classification and analysis of such vast and diverse sample was carried out over three consecutive laboratory seasons in Guatemala (2010 – 2012) and was possible thanks to the classification strategies employed, described in more detail later in this work.

1.1. Research Focus

My research addresses three main themes: the nature of the local status hierarchy at El Zotz; the correlation between social class and ceramic assemblages and the extent to which socio-economic inequality is visible through ceramic objects; and what the ceramic assemblages from El Zotz can tell us about the broader patterns of consumption, distribution and elite interactions among the ancient Maya.

1.1.1. Status hierarchy at El Zotz

The initial questions posited in my research centre around the socio-economic and political dimensions of elite households at El Zotz, their relationships with one another, and how these elite populations affected the history and prosperity of the site through time. Looking at the local level of elite activity, I aim to identify the histories of the selected El Zotz elite households and how they changed through time. I also examine how the trajectories of these local populations relate to the wider history of the Petén region. It is crucial to understand the dynamics of authority groups not only on wider regional levels but also locally. For this reason, I also aim to investigate the

relationships and nature of interactions among the elite populations of selected complexes with each other and with other, non-elite, groups, and how these relationships evolved through time.

The relationships among elite households will help me to establish whether there is evidence (which can be retrieved archaeologically) for a social, economic or political hierarchy among the elite groups at El Zotz, and to define the nature of the hierarchy among the five selected elite complexes. By setting all of my results in the local chronological sequence I intend to identify whether the elite hierarchy changed over time. If changes did occur, what impact the transformations of local elite hierarchical structures had on the ruling dynasty of El Zotz should be explored as well as the prosperity of the polity and its relationships with other Maya polities at different points in time.

1.1.2. Visibility of inequality through ceramic objects – the study of value

In order to answer the questions outlined above, I am required to look into both the architectural and the artefact evidence. The study of Maya ceramics forms the core of my research; therefore, it is through the study of value of ceramic objects that I intend to address the questions of socio-economic inequality and elite hierarchy at El Zotz. First, however, I need to establish whether it is possible to determine relative values of ceramic objects in archaeological assemblages and what methods are best to achieve this. If relative values can be identified, I then need to assess whether I can use them to identify costly, luxury or prestige objects, and further, whether I can use these values to identify which objects were potentially alienable and which ones were inalienable.

Establishing relative values of ceramic objects will enable me to identify whether there existed a hierarchy of objects, meaning that goods were classed into intermediate

categories between low-status and high-status, and whether these intermediate categories of objects can be recognised in archaeological material. Deriving the hierarchy of objects aims to establish whether the hierarchy of objects of consumption is related to the social, economic or political hierarchy of populations who consumed them. In other words, is it possible to establish the social, economic, and/or political status of a population group based on relative values of the objects they consumed?

Stemming from the above questions, it is also worth exploring the possibility that objects were treated differently depending on the contexts of their deposition or discard, and if this treatment was linked to the relative values of these objects and the nature of activities they were used in. Are there differences between the values of ceramic objects found in primary deposits (such as tomb chambers, burials, offerings) and in secondary refuse deposits (such as construction cores)? And to further investigate this topic, I will examine what these different types of deposits, and the possible patterns of object deposition within them, can tell us about the populations who occupied the selected architectural complexes (for example, Beaudry et al. 1991; Brooks and Connah 2007; Costin and Hagstrum 1995; Costin and Earle 1989; Ferguson 1991; Ferguson 1992; Babić 2005).

1.1.3. Maya elite tastes, behaviour and interactions

Investigating the socio-political hierarchy at El Zotz through the medium of ceramic objects of different relative values has the potential to shed light on some of the broader questions about ancient Maya elites. Many of these broader questions stem from the objects' distribution around architectural complexes. For example, I will study whether ceramic assemblages vary in relation to the size of the architectural complex. With this in mind, I will assess whether the smaller architectural complexes contained different ceramic assemblages, of different relative values, compared to the assemblages from the

larger complexes. Value of ceramic objects is here measured from the amount of actions required for their production and from their likely mode of circulation (Graeber 2001, Kopytoff 1986, Hirth 1998, Feinman et al. 1981). Stemming from this analysis it can be explored whether certain objects, based on their distribution across different households, can be identified as being of elite or non-elite association, also sometimes referred to as being of elite and non-elite taste (Bourdieu 1984). If certain objects can be categorised as being of elite tastes, what does that signify about elite involvement in the production and circulation of these objects?

The consumption behaviour of elites is deduced from the distribution patterns of objects associated with elite tastes. The distribution patterns studied in the current research can also signal the modes of circulation of different types of objects. Ceramic vessels with widespread distribution, appearing frequently in archaeological contexts, could have been circulated through different means than the very rare objects. Electing different modes of circulation for different objects likely contributed to any restrictions of access which might have been employed by the ancient Maya elites. Thus, I will additionally study whether different classes of ceramic vessels show evidence of different modes of circulation and whether circulation of any of the objects seems to have been restricted to small selected populations at the site.

The research presented on the following pages aims to address the above questions and topics with the aid of a vast ceramic data sample and multiple lines of analyses. I employ a holistic view when analysing the ceramic data, a view that includes the chronological sequence, architectural features, and consumption behaviour to assess the socio-economic and political dynamics of elite populations of El Zotz. The following chapters present a journey through my research, from the details of my theoretical research, the study of the most appropriate analytical methods, through the presentation

of results of my quantitative, qualitative and statistical analyses, to the discussion of my findings and the concluding remarks.

1.2. Outline of the Text

The next chapter, Chapter 2, introduces the concept of social stratification in ancient Maya societies and what we know about the ancient Maya elites. I highlight the roles of the elites in warfare, the means through which they exercised their authority and the scope of their power within Maya polities. I also discuss theories of ancient Maya economy, the modes of production and consumption of goods and elite involvement in both. I then take a closer look at the modes of objects' exchange and consumption through the theories of gift-giving and commodity exchange, the theories of value and how these theories fit in the realm of ancient Maya objects. I also summarise the main markers of the Maya elite built environment and elite relationships with architecture, which provides the setting and context for objects' consumption.

Chapter 3 outlines a brief summary of the known history of the Petén region, the history of academic research at El Zotz, and how the different historical events affected ancient El Zotz populations and other neighbouring sites.

In Chapter 4, I outline the methods I used for ceramic classification and list the strengths and limitations of these methods. I also assess the theoretical framework behind each method of analysis and its suitability for answering my research questions. I detail all of the approaches towards data analysis which are employed in my research. The results of each analytical approach form the subsequent chapters of my work. I describe the methods and theories behind chronological sequencing and the diversity of Maya architecture. I then provide details of the quantitative and statistical analyses I

used to derive consumption behaviour from ceramic data. I close the chapter with a brief overview of the ceramic sample gathered for my research.

In Chapter 5, I present the chronological sequence of the selected El Zotz complexes based on the analysis of ceramic material and stratigraphic sequence and supported by textual evidence and carbon dating. The history of El Zotz complexes is outlined for seven chronological phases: Late Preclassic (Chub phase), Early Classic early facet (Saquij I), Early Classic late facet (Saquij II), Late Classic early facet (Mo' phase), Late Classic late facet (Caal), Terminal Classic (Cucul), and Early Postclassic (Choc). I also summarise the characteristics of ceramic assemblages dated to each chronological phase and list the locations within the El Zotz complexes from which these assemblages were recovered. With this chapter I set out the historical context of my research and outline the temporal patterns for further analysis.

Chapter 6 provides the details of architectural configuration of the selected El Zotz complexes and how they transformed through time. First, I discuss the location of the complexes and what advantages or disadvantages the location might have posed to the resident populations. I then compare the size and types of open spaces and architecture found at each El Zotz complex using variables such as area size, presence or absence of masonry superstructures, presence or absence of masonry platforms, proximity to complex core. I delve more deeply into the history of construction events at each complex to demonstrate how the architectural groups changed through time. I also itemise the special deposits (burials, caches, unique artefacts) found at each complex.

Chapter 7 provides the full outline of all of the results of ceramic analysis. I start with the results of Production Step Measure analysis, detailing how the results changed throughout the chronological phases and across complexes. I then examine the

emerging patterns of consumption with statistical tests and assess their strength. I continue with detailing results of further data analyses: Surface Treatment Analysis, Heterogeneity Measure Analysis and Decorative Complexity Analysis. I anchor the results of each method of analysis within the El Zotz chronological phases, the construction phases of different structures, and within the broader history of the site.

In Chapter 8, I summarise and evaluate the findings presented in previous chapters. I supplement the results of ceramic sherd analysis with information on ceramic offerings (complete vessels) and other, non-ceramic, artefact types excavated from the five selected El Zotz complexes. I integrate the patterns of elite consumption behaviour gleaned from El Zotz ceramic data with our knowledge of the history of the Petén region. I additionally explore topics of elite consumerism and control over the distribution of objects. How well ceramic goods can make the social, economic or political inequality visible and whether this inequality can then be retrieved archaeologically are assessed. I discuss the role of ceramic vessels in political and social conventions and review how accessible different types of objects were at El Zotz. I conclude this chapter with an examination of elite control over the distribution and consumption of goods.

Finally, in Chapter 9, I provide a critical review of the outcomes of my analyses and interpretations against the posited research problems. I reiterate the challenges and limitations of archaeological artefact analysis which I have encountered during my research and emphasise the importance of a holistic approach to the study of past human behaviour.

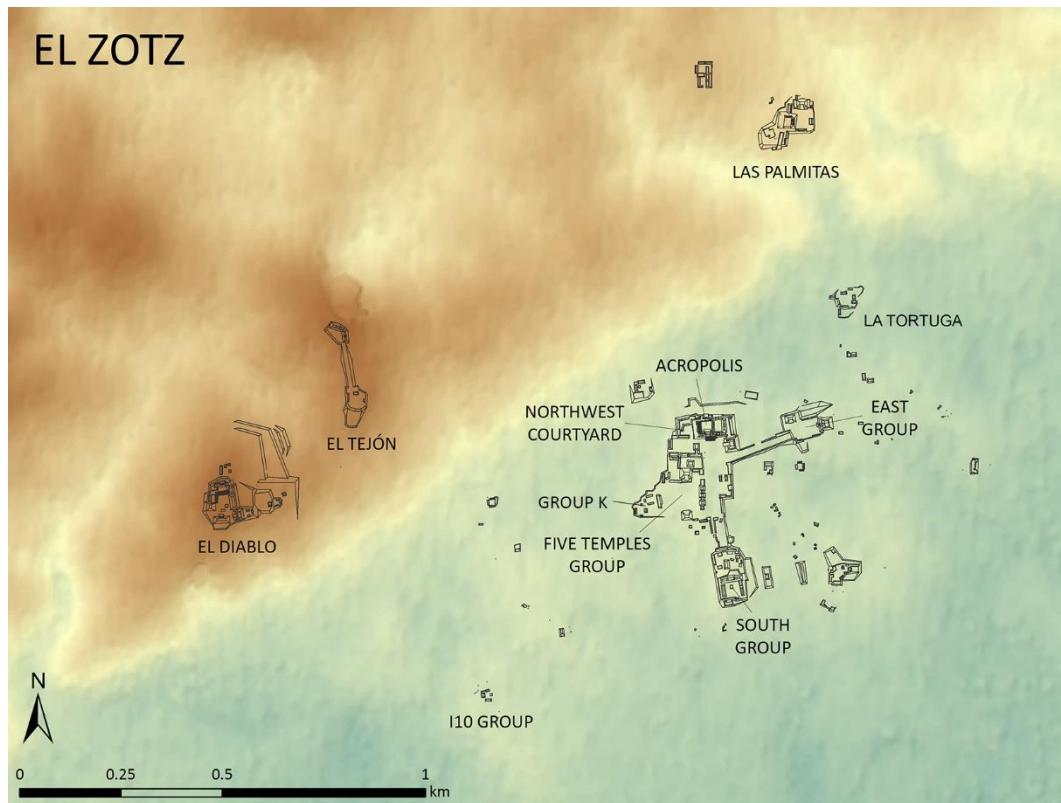


Figure 1.1 El Zotz site plan with location of all complexes and sectors of the site. (Map by T. Garrison)

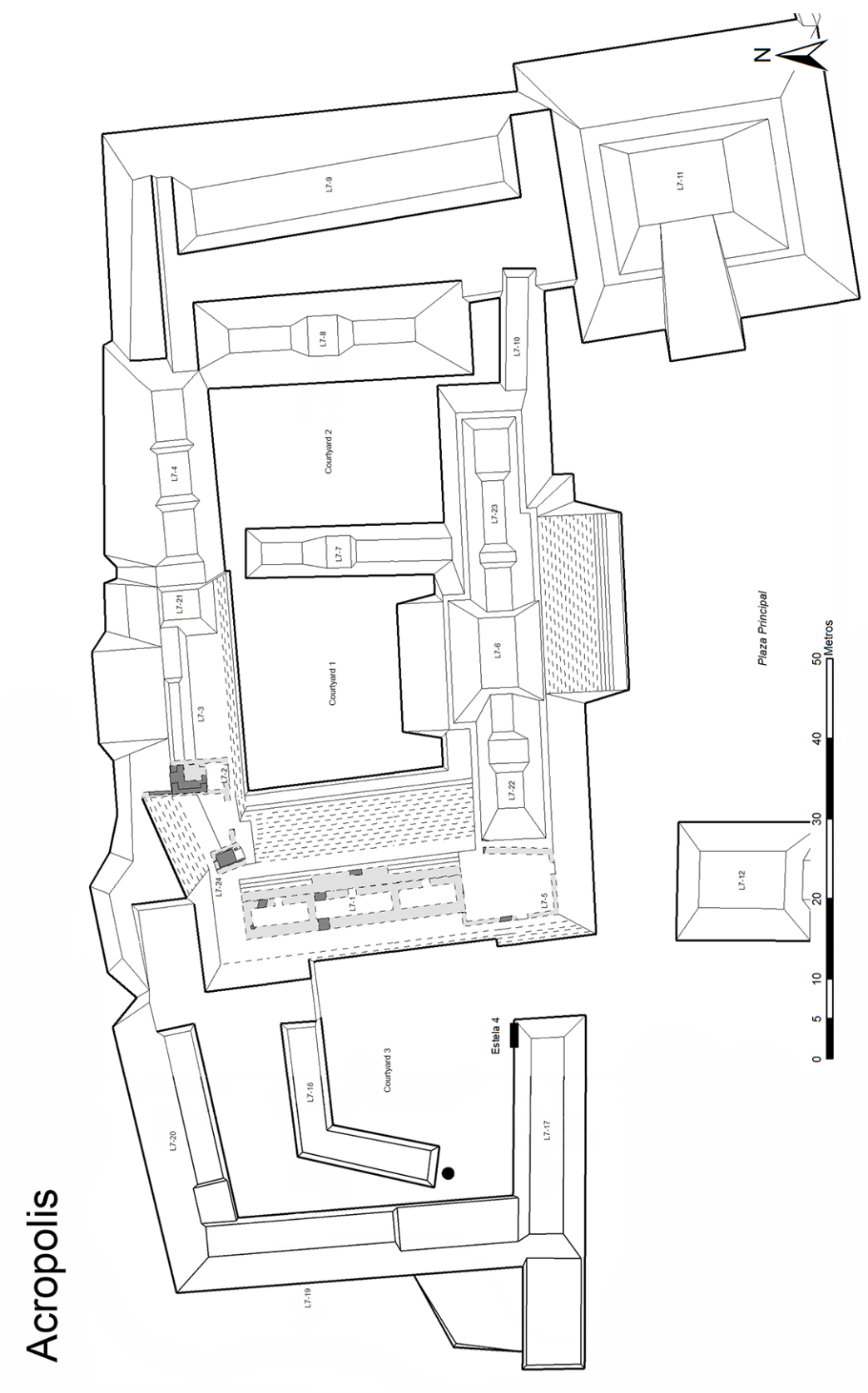


Figure 1.2 Plan of the Acropolis complex. (Map by T. Garrison)

El Diablo



Figure 1.3 Plan of El Diablo complex. (Map by T. Garrison)



Figure 1.4 Plan of Las Palmitas complex. (Map by T. Garrison)

El Tejón

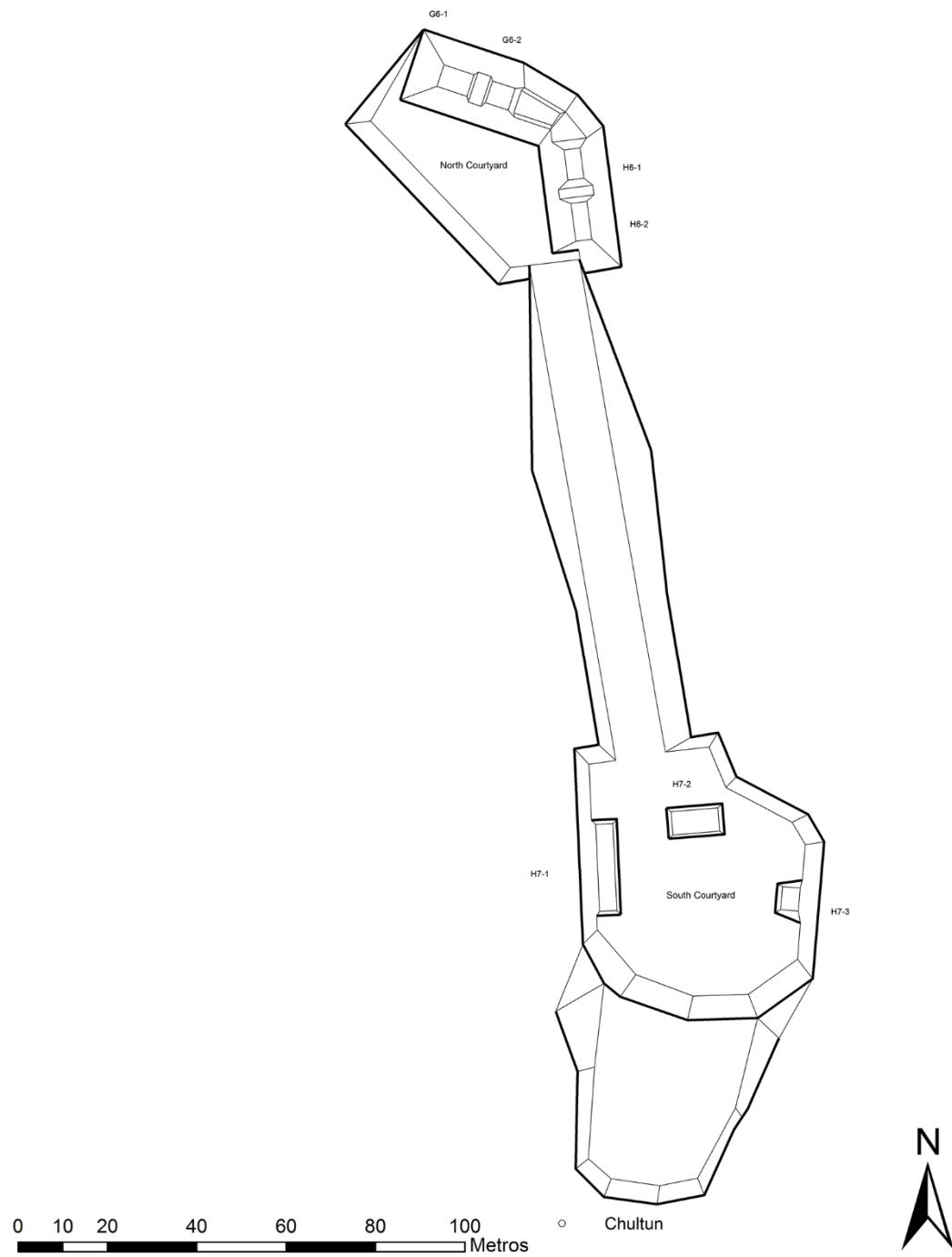


Figure 1.5 Plan of El Tejón complex. (Map by T. Garrison)

Group K

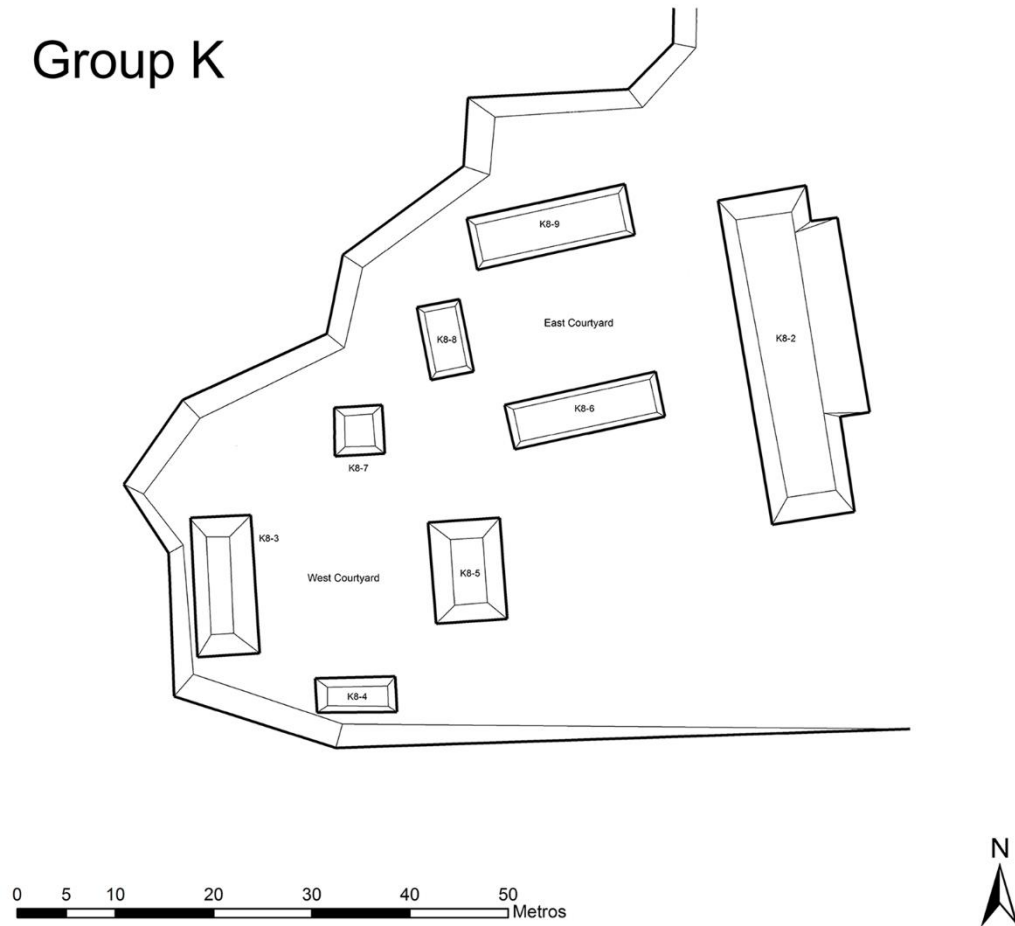


Figure 1.6 Plan of Group K complex. (Map by T. Garrison)



Figure 1.7 Earspools from El Tejón complex (photos and drawings by N. Carter, in Carter et al. 2012)

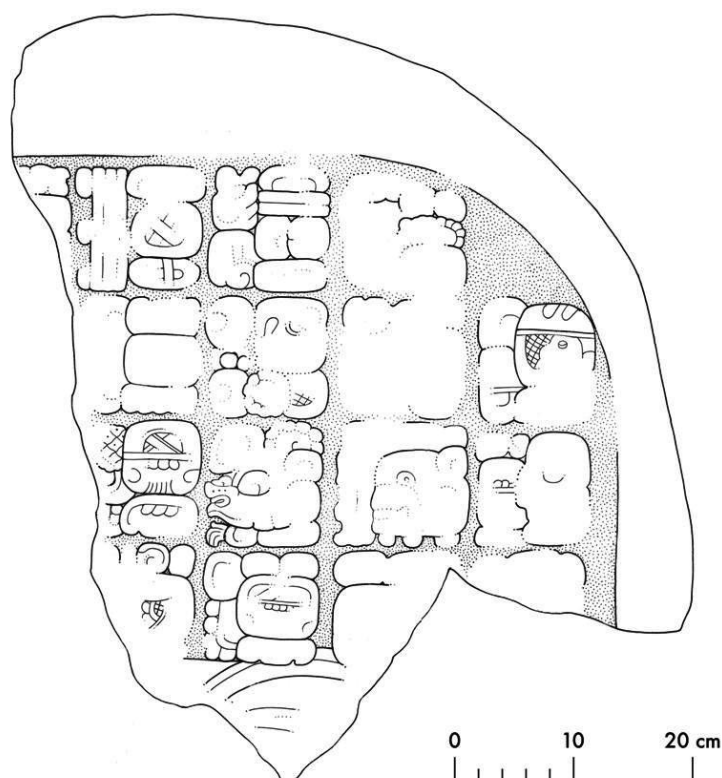


Figure 1.8 Stela 4 with the emblem glyph of El Zotz and a date March 12, A.D. 830 (drawing by S. Houston, in Newman and Menéndez 2012, 181).

CHAPTER 2. Ancient Maya Elites and the Theory of Value

2.1. Ancient Maya society, elites and the non-elites

‘Civilisation’, still a controversial term to some scholars, is defined by Houston and Inomata (2009, 65) as ‘a set of cultural practices and ideas which tend to accompany societies with pronounced centralization and inequality’. This description highlights the importance of shared practices, behaviour and material culture by a society, as well as the presence of centralization of the cultural norms which are usually dictated by authority groups emerging from social and/or economic inequality. Thus, it seems the political and social power groups play a significant role in reproducing cultural constructs of the communities. The tastes of the high social classes, as dictated by their upbringing into a particular social status and education (Bourdieu 1984, 5-6; Houston and Inomata 2009, 38; Paynter and McGuire 1991, 9-16), become not only the source of their power and means through which they legitimate their social position, but also dictate and define what it means to belong to these social strata.

Maya civilisation developed in an area of complex landscapes filled with numerous Maya ‘city-states’, each involved in its own social, economic and political affairs, and each developing its own economic and political networks (Sharer 1994, 63-64; Martin and Grube 2000; de Montmollin 1995; Martin 2003; Schele and Freidel 1990). Each Maya polity would therefore have to have authority groups which were concerned with the intra- and inter-polity affairs. The elaborate courts of Maya kings certainly had powerful cultural influence and set aesthetic and behavioural standards for the rest of the communities at the same time that the court distinguished itself from these communities to the same extent as powerful households did, and still do, in other societies (Webster 2002, 438).

2.1.1. The scope of elite power and authority

The traditional archaeological and anthropological theories for emerging social inequality tend to be economy-based, in which the so called ‘aggrandizers’ aim to control, or to receive the main benefits of, the natural resources and labour which ultimately become their direct source of wealth and authority (Hayden 1995, 67). Arnold (1995, 88) states that elite entitlement and supervision over information and technology, crucial for economic success, create networks of dependencies in which groups outside of the elite circle are marginalized from positions of political and economic power. In the case of the Maya, however, there is evidence that the elites built relationships with the general population in order to provide resources for their courts rather than directly controlled the subsistence economy within polities (Graham 2012, 425; Given 2004, 93-95). The fact that many small commoner communities functioned and prospered after the disappearance of ruling families during the ‘collapse’ in some of the Maya Lowland sites may be an indication that elites had a limited role in directly controlling economic production on a household level or in creating direct economic dependencies (for example, Demarest 2004, 206). As Graham (2012) observes, the ability of various groups and communities to adjust to changing political, environmental and social conditions would not be likely within centralised states in which elites truly controlled the economic infrastructure. Maya elites did seem to be involved in the activities of economic production and exchange, yet the political powers of state offices were not used to directly control or regulate the economy (Graham 2012, 423-425).

Because many rulers are portrayed on temples, the implication is that they were directly involved with the temple rites, associated themselves with the divinities, and monopolized the connections between people and deities, all of which are known to be powerful ways to control society and legitimize political authority without actually

controlling people's lives and decisions directly (Taube 1998, 463; Graham 2012, 425). In the face of this evidence, some Maya scholars propose that the ancient Maya elites had their power resting on military and ritual control; they managed the social resources, such as ideological and mythical knowledge, rituals, titles, access to prestige objects requiring specialized knowledge and skill to produce, rather than regulated the natural resources, which seemed to be in the hands of the households, not classes (Pohl and Pohl 1994, 144; Ball 1993, 245-247; Demarest 2004, 206). Because of this organisation of the ancient Maya economy, Maya elites are compared with the modern corporate and ruling elites who appropriate resources but allow enough distribution of resources to non-elites in order to prevent any serious social unrest (Graham 2012, 421-425). The massive theatrical events sponsored by the royal and the elite Maya lineages were critical for the integration of Maya communities; they legitimized the social and political positions of the elite sponsors and performers, as well as projecting the ideology and values they wanted to disseminate among the masses (Inomata 2006, 810-818). The rituals of the so-called 'theatre-states' may have helped create and maintain the illusion of more direct and critical role for rulers and elites in subsistence and economic systems (Demarest 2004, 147).

Often, Maya 'elite' groups are associated with superiority in wealth, power and social privilege, which is recognised by the community and is easily associated with a particular set of material remains (Marcus 1983a, 3; Chase and Chase 1992, 3). In general archaeological terms, elites are traditionally defined as groups having more access to luxury goods, are associated with more elaborate architecture, and have more elaborate burials than the non-elites (Elson and Covey 2006, 10). However, 'elites' may also signify those who take care of society's political, economic, social, and religious institutions (Marcus 1983b, 12-13) in which case they represent the abstract concepts of

power and control within a society (Chase and Chase 1992, 3). They are, thus, concerned with maintaining the system in which they exercise the political agency and decision-making, as well as with legitimizing their place in the society – their social exclusivity – most visible through the practice of ‘elite ideology’ (Elson and Covey 2006, 5).

One of the means by which royals asserted authority was the creation of the position of divine kingship, well recorded in the Classic hieroglyphic inscriptions (Martin and Grube 2000; Houston 1993, 2008b). Divine kingship became in many societies a tool for legitimising rulership and inequality (Webster 2002, 434). Maya kings associated themselves with divinities, they impersonated gods in rituals, were represented in art in deities’ attires, and some seem to have become gods after their death (Webster 2002, 434). The title *ajaw* originally seemed to have been restricted to kings and their close relatives (Houston and Stuart 1996, 295). However, the ever increasing number of lords, or persons claiming the title, throughout the Classic period presents the possibility that an increasing number of elite members claimed to be the descendants from living or dead kings (Webster 2002, 441; Martin and Grube 2000), or that their own lineages were of high noble status, perhaps comparable to royalty.

The social segregation, seen as more prominent during the Late Classic period (ca. 550-850 AD) in comparison to earlier periods, was balanced by the presence of public gathering areas, often marked with monumental art such as carved stelae with royal and elite imagery and hieroglyphic texts. As Houston (1995, 7) observed, most inscriptions deal with the lives of particular rulers and their local affairs. These themes occur among others which deal with rulers’ wider political culture, e.g. royal and noble visits, alliances, intermarriage, warfare. As advocated by Borowicz (2003, 232-234), stelae were used by the rulers of Maya centres to convey propaganda to the wider public,

disseminate information to reinforce and legitimate the ruler's power, and even to reinvent the public image of a ruler at times of political change or instability. Therefore, the fluidity of artistic representation of the royal family was exploited to communicate propagandistic messages to the public in the most efficient way possible – through the erection of the new, or the desecration of the old, public monuments.

The practice of emphasising the individual character of Maya rulers and other elites links them to specific places, and makes their power heavily embedded within the political landscape. Geographically, royal and elite lineages were linked to specific Maya polities and places (Tokovinine and Estrada-Belli 2015, 205-209) where they were historically established, and where these lineages drew their power. They are described as rulers or nobles of particular cities represented by emblem glyphs (Martin and Grube 2000). Polities or kingdoms in the Maya world were places to which particular families had historical rights and no foreign or alien ruler could annex or conquer a place to which his lineage had no historical ties (Graham 2012, 429). Locally, these lineages were connected to places within these polities where their ancestors were buried and where royal and ceremonial monuments, imbued with power imagery, were constructed by previous generations (Webster 2002, 449, Tokovinine 2008, 20-22, 206-207). Inclusion of ancestors within the built space facilitated the social definition of residence, its identity and distinctiveness, and augmented the political centrality of selected locations of ancestor veneration, which was practiced by both elites and the non-elites (McAnany 1998, 271-272). As among other ancient states, for instance at Uruk, it is reasonable to suggest that proximity to sacred places was one of the major considerations for location of royal complexes (Smith 2003, 214). This evidence stresses the importance of illustrating connections to powerful ancestors as means to legitimate power among the elites as well as the ways the elites tied their power to

places through royal ancestor burials and tombs underneath temples and shrines (Martin and Grube 2000, 16-17; McAnany 1998, 271-279; Demarest 2004, 96, 117; Ashmore 1989, 273; Weiner 1992, 7). There is evidence that at Copan, Tikal, Uaxactun, Caracol, Dos Pilas, or Toniná, the construction projects undertaken by dynastic founders, as well as their burial locations, become sacred places, necropolis and centres of symbolic and divine or even political power (Fitzsimmons 2009, 108-115). The physical proximity of the divine ancestors strengthened the lineage's access to power.

The authority generated through such cultural and social strategies is directly correlated with elite political agency and decision-making status. Elites are generally characterized as having greater capacity to shape the system in which they live; however, some groups in the elite hierarchical organization may have more influence than others (Elson and Covey 2006, 7). The amount of authority a group or a lineage has within a community will shape its relations with other social groups and determine whether the members of the group or lineage are perceived by the population as worthy leaders or not (Webster 2002, 437). Smith (2003, 108) suggests that the level of elite authority is dependent on two fundamental processes: the power to direct others and the recognition of the legitimacy of these commands. This highlights the importance of the relationship between rulers and their subjects, and the relationship among different elite lineages. Thus, the kinds of ties, alliances or conflicts which might have occurred among the elite groups most likely resulted from the power struggle and the success or failure in recognising one group's authority or leadership.

The distinct relationships built among elite lineages within polities are crucial to understanding the scope of the elite power and control within the ancient Maya society. Smith (2003, 104) distinguishes four practical relationships which lie at the centre of how we conceptualize the notions of political power and control: 1) inter-polity ties

(which are most visible in Maya archaeological remains and textual records), 2) relations between the regime (authority groups) and the subjects (which are partially visible archaeologically on local levels), 3) relations among power elites and their individual links to the grassroot social groups (which are so far poorly understood in reference to the ancient Maya elite households and their clientele), and 4) relations among governing institutions (partially visible in the hierarchy of titles but still poorly understood).

It is also important to note that the authority and power to direct others does not involve only physical domination and threat but also coercion and attraction, which were just as important, if not more important, in the ancient Maya communities. As Graham (2002, 413) describes it, in order to understand the accumulation of power by the elites, it might be more fruitful to look at ‘social compliance’ – why members of communities recognise the power of leaders and follow their directions – rather than to look at the elites themselves. A stratified socio-political system can only be successful over a long period of time if it is perceived to be legitimate in the eyes of the governed society (Kus 1982, 51-53; Paynter and McGuire 1991, 8-9). It is proposed that feasting was one of the strategies employed by the elites to promote the production of surpluses in the communities as well as to advertise the power and prestige of the host, which in turn attracted more labour and legitimated the host’s higher social status (Hayden 1995, 38-47). Having access to resources, yet sharing them under certain circumstances, reinforced the host’s power to materialise inequality through objects or goods that differentiate the wealthy from the poor. At the same time, sharing resources by sponsoring public and private feasts and ceremonies strengthened social bonds (Houston and Inomata 2009, 41). Isbell (2007, 89-92) argues that Wari elite women made fine pottery and as well as great brewing jars used for brewing large quantities of

beer as this is what the elite households used to access labour. Studies of ceramic distribution, especially in rubbish dumps located in the proximity of elite compounds, suggest that feasting activities were important among the high social classes (Reents-Budet 2000; LeCount 2001; Hendon 2003; Pendergast 1982, 1990). Even though the available carved and painted representations of feasts pertain solely to the elites, feasting most likely involved all levels of the community and reinforced social relationships through the aspect of sharing food and other resources (Houston and Inomata 2009, 41). Such practices are the examples of how the authority of groups with greater economic capabilities were legitimised, communicated to others and reproduced as an embedded cultural practice.

2.1.2. Social tiers of the ancient Maya elites

Traditionally, Maya society was considered to have consisted of two tiers: the elites and the non-elites, or the commoners (Adams 1981, 341; Chase and Chase 1992, 8). The homogenous view of the elites within Maya communities was challenged after archaeological and epigraphic research proposed more complex stratification of Maya societies, hierarchy among polities and greater number of intermediate groups with varied levels of control and authority (Chase and Chase 1992, 11; Martin and Grube 2000; Morley et al. 1983; Graham 2006, 120, among others).

The view of Maya society being complex and multi-tiered was first developed based on the archaeological assessment of wealth and specialization, which for some researchers reflected the presence of a large ‘middle class’ (Chase 1992, 32). The traditional material culture attributes of the royalty and the nobles such as jade jewellery and masks, rare shells and shell ornaments, textual records and mirrors, among others, are used to distinguish the highest tiers of Maya society. However, the relatively widespread distribution of certain attributes of architecture, such as tombs or stucco

reliefs, and the ‘luxury’ items, such as polychrome ceramics, suggest the existence of social groups other than the upper elites and the commoners. Arlen Chase (1992) proposes the existence of one more group – the ‘middle men’ – based on the archaeological research from Caracol involving the distribution, size and contents of tombs. He concludes that, with the exception of the textual record, the presence or absence of tombs and specific ‘luxury’ objects traditionally associated with the higher classes does not seem to provide a correlation with social status at Caracol (Chase 1992, 38). The glyphic inscriptions recovered from five tombs, located at the site’s epicentre as well as outside of it, do not contain records of Caracol’s rulers. This promotes the idea that hieroglyphic texts, including emblem glyphs, were associated with a greater number of individuals, probably other members of royal lineages and possibly other noble families.

It has been suggested that activities traditionally associated with the royal family, such as foreign relations, taxes and tribute, monumental building projects, were in fact of wider elite concern, in which case the kings may have experienced significant influences of other powerful lineages within the polity (Webster 2002, 437). It is known from inscriptions that people of status below the rank of the kings were able to participate in important ceremonies, for example, as deity impersonators (Houston and Stuart 1996; Webster 2002, 441). Thus, there is much space for a class or status hierarchy in which each group has a level of authority and public, governmental, administrative or religious responsibilities. This differentiation would potentially be exemplified by variations in the kinds of ‘luxury’ items the specific elite groups could acquire, or the way in which they were used. Such items do not solely have to reflect the group’s wealth, but can be associated with the group’s function in the society. For instance, in Blue Creek, certain elite groups are distinguished as ‘ideological’ and others

as ‘economic’ elites (Guderjan et al. 2003). The variations in the quality of masonry construction and objects’ decorations are, therefore, probably indicative of gradations in social status as well as the different professions of the elite and other classes (Christie 2003, 7).

The socio-political structure of Maya polities was not uniform through time but was subject to change, as is suggested by the archaeological and hieroglyphic records. The Late Classic period saw an increase in the erection of monuments, such as carved benches, altars or elaborate façade sculptures, commissioned by high elites rather than solely by the kings and royalty (Martin and Grube 2000; Webster 2002, 441). It seems that non-royal elite lineages were gaining power and privileges which were previously reserved for the royalty. The elites might have taken advantage of the opportunities to create and legitimize political positions through public mass theatrical performances and thereby to have advanced their own political agendas (Inomata 2006, 819). Another possibility is that an increasing number of people from the ruling lineage were being excluded from the royal household (due to the fact that the Maya practiced polygyny), thus having to establish their own households (Pohl and Pohl 1994, 151; Webster 2002, 442). It has been suggested that social stratification in various regions of the Maya area, particularly pronounced at sites such as Copan, Yaxchilan, Piedras Negras, Palenque, and Tikal, became more complex and that the elite class gained in size and influence (Christie 2003, 2; Smith 2003, 185; Fash 1998, 256). Stuart (1993, 323-324) shows that the growing number of elites received various non-kingly titles and were able to erect their own monuments (such as various benches at Copan, Noble 1998), thus becoming a growing political force the ruling family had to acknowledge. The hierarchy of titles, and the amount of titles recorded in glyphs, expanded considerably over that time period (Jackson 2013, 95-110). There were lords with the title of *kaloomte’* restricted

only to the strongest dynasties during the Classic period, such as the kings of the regional powers of Calakmul, Tikal or Copan (Martin and Grube 2000, 17, 37, 215); then there were the divine lords (*k'uhul ajaw*) and lords (*ajaw*), head sublords (*b'aah sajal*) and lesser sublords (*sajalob'*), as well as a series of specialist individuals with their own lesser titles, such as 'keeper of the sacred book' (*k'uhuun*), 'fire lord' (*yahaw k'ak'*), scribe or painter (*ah tz'ib*), master craftsman (*itz'aat*), head sculptor (*b'aah uxul*) and carver (*ah uxul*), (Marcus 2006, 215-217; Jackson 2013, 11). Such a variety of recorded titles is a testament to the increasing number of individuals of authority, but also to increasing hierarchy among these individuals as the titles listed probably include a great number of 'middle-class' positions.

Moreover, numerous sites experienced a period of increased monumental construction and artistic output within the royal complexes and beyond (Guderjan et al. 2003; D'Arcy Harrison 2003; Garrido López et al. 2011, 2012; Pendergast 1981; among others). Increased construction rate was aimed not only at expanding the already existing elite complexes but also at creating new ones. Numerous palace complexes with varied degrees of architectural elaboration and artisanship, and often multiple phases of construction, were recovered from sites, such as Copan, Tikal and Aguateca (for example, Harrison and Andrews 2004; Webster and Inomata 2004; Fash 1998; Inomata 2003). Decreased access to royal and elite compounds through the addition of doors, corridors, rooms and other architectural features is a pattern seen in many Maya sites in the Late Classic period and likely reflects changes in social and political structure (Houston 1998a, 522; Pendergast 1982, 78-145). All the studied complexes bear characteristics of elite residences; however, their functions and appearance varied greatly among the sites while the patterns of material deposition and abandonment also

showed variations within the sites. It is important to note that the elite factions differed from polity to polity and a hierarchy existed within the polities.

2.1.3. Warfare and conflict

With the apparent increasing numbers of elites in the Late Classic period there also appear more records of regional competition and warfare between polities. As advocated by Maya scholars, warfare was primarily a practice of the elites with little or no involvement from the commoners, although roles for commoners have been proposed as protecting elites from capture yet without playing a primary or decisive role (Graham 2006, 120; Freidel 1992, 107-116). Economic ambitions are often listed as the reason for warfare, such as control over trade routes or tribute networks. Taking captives, rather than killing enemies during battles, is suggested to have been a mechanism behind appropriating and shifting tribute rights from one Maya elite family to another (Graham 2006, 116). Maya elite ideology seems to be ever-present in the general background of warfare as it is today. Warfare was most likely used to legitimise ideology (among other pursuits) when encounters between networks of human agents with conflicting interests, and conflicting ideologies, resulted in violent clashes (Normark 2007, 165-169).

It might be the case that warfare, and what it was meant to achieve, was in fact of elite concern rather than of wider community-level concern. Evidence supporting this statement was found at Dos Pilas and Aguateca, where the remains of elite structures, rapidly abandoned due to conquest, contrast with continuing (albeit short-lived) occupation of commoners' houses, abandoned in a slower and more deliberate process (Palka 2003, 121; Inomata 2003, 56-60). The different ways in which the elites and non-elites were involved and portrayed in warfare mirror the different treatment of social classes in rituals. Moreover, the reaction to warfare of the ruling lineage and other elite

groups was different at Aguateca from Dos Pilas. At Aguateca, the royal palace was most probably abandoned before the attack from the enemies, while the surrounding elite structures were occupied until the time of the attack and their destruction (Inomata 2003, 56-60). One of the possible explanations is that the lesser elites had their own network of tribute and clientele and thought they could survive the conflict (as did the commoner households) because the conflict involved the ruling lineage and not their own. The entire epicentre of the city was, however, targeted by the attackers and all elite and royal structures were affected by a similar level of destruction (Inomata 1997, 348).

The models for the development of conflict most often suggest that the competition among parties closely tied together (within a lineage, between lineages within a polity, and between adjacent polities) is most responsible for warfare (Pohl and Pohl 1994, 138). Scholars have suggested that conflict is more likely to occur among elite groups in regular contact than between social strata that experience less interaction (Elson and Covey 2006, 9). Factions, which are defined as structurally and functionally similar groups, are more likely to compete for the same range of resources and positions of power and prestige within societies (Brumfiel 1994, 4), which explains why warfare is viewed as primarily an elite practice and why it may have increased during the Late Classic. There are many examples of elite competition leading to warfare, such as the rivalry within the royal family at the site of Tikal, which prompted a division of the lineage and a creation of a new, rival, Maya city –Dos Pilas, with which Tikal was in constant conflict with (Martin and Grube 2000, 56).

The locally-based politics, sensitive to social discourse, prove to be the basis for inter-site political and economic affairs among the Classic Maya centres. Therefore, the Maya geopolitical landscape is partly the result of local political relations and power struggles among the members of the royal and other noble families. Recognising and studying the

relationships between distinct elite factions on a local level – within a polity – constitutes one of the crucial elements of understanding the political structure of any polity and is conscientiously addressed in the scope of this research.

2.2. Ancient Maya economy and the elites

2.2.1. General economy and prestige economy

In an attempt to link the political and economic powers of the elites within a theoretical framework, Foias and Bishop (2007, 213-214), following previous discussions (e.g. Ball and Taschek 1992), propose that two different spheres existed in Maya economy: a general economy dealing with utilitarian and subsistence goods, and a prestige economy dealing with prestige, luxury and wealth goods. General economy encompasses all the activities pertaining to the production, exchange and consumption of subsistence items, including utilitarian pottery, stone and bone tools, widely grown foodstuffs. Prestige economy involves the production, acquisition, distribution and consumption of articles used for status affirmation or in elite-initiated transactions through which bonds are maintained between elite groups of different polities and among the members of the same polity (Ball and Taschek 1992, cited in Foias and Bishop 2007, 214).

These definitions imply that objects became part of one of the economic spheres beginning with their production and that the production within prestige economy, as opposed to the one in general economy, was managed by the elites. However, there is no evidence that elites exercised control over the production of the wealth products and the existing evidence of elite involvement in the production process relates to only a few specific objects (for instance, polychrome vases with glyphic records, Reents-Budet 1994, 55). The few examples of objects produced by members of the elite class do not indicate that all such objects were produced, or that their production was in some way

managed, by the elites. Moreover, there is no archaeological evidence suggesting that objects cannot move between ‘economic spheres’ in any stage of their lives.

Consequently, the distinction between ‘general’ and ‘prestige’ economies is rather a distinction between different networks of circulation of products, which in most cases did not depend on the mode of production. The object becomes ‘prestigious’ when it is part of the elite network or when it circulates among the elites as a finished product, not when the resources and materials are procured or when the object is manufactured.

What Foias and Bishop term ‘prestige economy’ should rather be considered a ‘prestige’ network of product, circulation and use, through which objects make their way into elite networks.

There is stark evidence that the production and circulation of subsistence goods, unlike some of the luxury goods, did not cease after the disappearance of elites from the Classic Maya centres (for example, Foias and Bishop 2007, 235; Demarest 2004, 206; Graham 1987a, Graham 2006). It implies that, while the elites did not manage the production of goods, they influenced the economy through demand. Lack of demand for luxury or ‘prestige’ objects would ultimately inhibit their production. Although there exists evidence that at some sites the elites controlled and managed their own lands (gardens) around the palaces (Demarest 2004, 147), the subsistence of the elites was likely based on tribute networks (for example, Marcus 1993; Tourtellot 1993, 231; Demarest 2004, 149). It is largely accepted among Maya scholars that the greater needs of royal courts were supported through tribute and labour from the supporting populations, while exchange and barter was practiced among the extended families and households of the general population, often with the aid of local and regional markets (Demarest 2004, 150; Hruby 2011, 172; Chase and Chase 2013, 75; Masson 2002, 5).

These tribute networks are the manifestation of elite demand which most likely stimulated the production and supply of ‘prestige’ and also subsistence products.

2.2.2. Producers and consumers of goods

When investigating the distribution patterns of goods across sites it is essential to understand how these patterns might have been affected by the production and consumption practices of a given society. Some of the most extensive work on the nature and scope of exchange of goods in the Maya area, and on their modes of production and consumption, was accomplished with the aid of ceramic data (for instance, Chase and Chase 2013; Foias and Bishop 1997; Foias and Bishop 2007, Reents-Budet 1994; Reents-Budet et al. 2000; Aimers 2013; Hirth 1998; Garraty 2009; West 2002; Halperin and Foias 2010). The evolution of ceramic production has long been regarded as one of the indicators of social change (Arnold 2008, 1). Craft specialisation creates new ties of interdependence which define social integration; thus, ‘craft specialisation’ is a social as well as an economic concept (McAnany 2010, 205). Production of ceramics, and any other good, is closely related to consumer demands, as mentioned above. Consumers, who include elites, create demand for the specialist’s or artisan’s products and sufficient demand must exist to support specialised production. Such demand may be a result of large population size and density; however, the socio-political factors also play a vital role, for instance, in the demand for ritual pottery (Arnold 2008, 5). Therefore, when analysing and interpreting a range of objects, such as ceramics, one has to consider the possible relationships between the producers and consumers of these items.

On the one hand, scholars present the concept of ‘independent specialists’ whose production is driven by profit and efficiency and is aimed at an unspecified consumer (McAnany 2010, 203). Consumers of these products may choose among the items based

on factors such as cost, quality, or social context (Arnold 2008, 4). In cases where objects, such as pottery, were made for commercial trade and a competitive market, any stylistic modes and changes may have been dictated either by the producers (through their choices during the production process) or by the consumers (who controlled the market through demand), (Adams 1979, 733).

On the other hand, scholars have also proposed the existence of ‘attached specialists’ who produced for a restricted group of clients or patrons and to whom the producer was ‘contractually bound’ and most likely resided nearby (McAnany 2010, 203). The objects produced by attached specialists play an important role in the reinforcement of status, socio-political power and the promotion of symbols of wealth and authority. Access to these objects becomes restricted to the clients – the elites – who are said to manage their distribution, thus also restricting their consumption (Arnold 2008, 4). As Graham (2002, 413) points out, however, the elite’s active role in, or control over, production is rarely supported by material evidence so it is problematic to think in terms of elite control over the production of goods by attached specialists. In cases where attached specialists cannot be identified, the production of elite or luxury goods should be viewed in terms of elite demand rather than control.

Producers are also frequently divided into full-time and part-time specialists for the purpose of various analyses. Recent investigations indicate that some of the artisans of elite luxury goods might have been only part-time specialists, thus suggesting that they also likely produced goods for their own use or for trade and exchange as well as getting involved in other activities. They might not have been exclusively ‘attached’ to their patrons (Demarest 2004, 167). On the other hand, it is argued that some of the artwork could only have been produced by highly trained specialists. This is thought to be the case regarding the production of the polychrome vases often presented as gifts

among the Maya elites, e.g. Codex-style pottery or Holmul style pottery (Reents-Budet 1994, 4, 88; Reents-Budet et al. 2000, 117, Demarest 2004, 169; Ball 1993, 258; Martin 1997, 863). In the case of Codex-style pottery, which was produced on a large scale in great numbers, it is suspected there was a division of labour between potters and painters as many vessels were relatively poorly formed but were painted by skilled artists (Reents-Budet 1994, 219). Nonetheless, it does seem that full-time pottery specialization might have been a less common phenomenon than previously thought, even though the potters possessed specialised knowledge of the geology and the craft. The full-time specialist craftsmen and artisans seem to have produced mostly the most precious items for the royalty and the highest elites.

2.2.3. Prestige goods and political control

Thanks to typological, stylistic and scientific studies (for instance, Instrumental Neutron Activation Analysis or petrography) of ceramic remains it has been possible to establish several general trends of production and distribution within ancient Maya economy: 1) pottery production was localised with numerous production loci, which made it difficult for the elites to manage (Reents-Budet 1994; Foias and Bishop 2007, 219-220; West 2002, 166); 2) some of the pottery vessels (classed as prestige goods) were produced by specialist potters who were not those making utilitarian wares (Foias and Bishop 2007, 219-220); 3) prestige goods were more likely to be transported over large distances (probably as gifts, tribute or social currency) than utilitarian wares, which were most likely distributed locally (although wide distribution patterns would be seen for domestic wares used to transport other materials, such as foodstuffs), (Hirth 1998, 459; Tite 1999, 202; Chase and Chase 2013); 4) prestige goods of local and non-local production often appear alongside each other at sites, which implies a great number of locations of prestige pottery production as well as the formation of alliances and socio-

political ties through gift-giving and trade (for example, Houston and Inomata 2009, 154; McAnany 2010, 184; Sullivan 2002, 211).

However, the dichotomy of 'local' vs. 'long-distance' trade is embedded in our understanding or interpretation of what constitutes a 'region' and which products are considered 'locally-produced' and which are 'non-locally-produced' or 'exotic'. As advocated by Graham (1987b) the distances over which the goods are transported should be measured less in terms of mileage and more in terms of environmental factors (distribution of resources) and social factors (modes of exchange, distribution networks) which affect the accessibility to given products (Graham 1987b, 762).

The ways in which Maya elites could have regulated the prestige networks include: the management over the flow of prestige natural materials (such as jade or *Spondylus* shell, although there is limited evidence to support this argument), creating restrictive commercial ties with merchants and securing access to luxurious items through wealth, the supervision over the work of attached specialists, and the restriction of the knowledge and skills necessary for the production of prestige objects. The specialized knowledge was used as an exclusionary tactic to maintain social distinctions between groups and was probably more valuable than the raw materials themselves (Hruby 2011, 171). The mastering of esoteric knowledge of artistic production, which was a form of symbolic and cultural capital, could lead to gaining political power (Inomata 2001b, 332). Some members of elite lineages were in fact involved in certain aspects of craft specialisation and production, such as painting of elaborate polychrome vessels, weaving of textiles or making of lapidary artefacts, for the private use of the household, for the use of the royal family, or as gifts (McAnany 2010, 184-185; Houston et al. 1988; Inomata 2001b, Inomata 2007; Reents-Budet 1994, Widmer 2009). This form of production, organized around household and kinship ties, and bound by the social

context of production and distribution (in this case – the context of Maya elite household) rather than by external demands (king's or noble's commissions), is called an 'embedded specialization' (Janusek 1999, 125). Archaeological evidence was unearthed at Aguateca, where rapidly abandoned elite residences provided information about craft production taking place in elite households, where many individuals were full-time or part-time specialist painters, scribes, artists, and craftsmen, as can be judged from the material remains (Inomata 2001b, 325-330; Emery and Aoyama 2007, 86). The evidence suggests the producers were part of the elite household, and it is further speculated they belonged to the elite class. It is also hypothesised that these individuals might have belonged to the ruling lineage but, due to polygyny and an increasing number of contenders to the throne, they were excluded from the direct line of succession and instead became highly specialised artisans, painters and scribes (McAnany 1993, 75). One artist's signature on a vessel from the Naranjo area carried the title *ajaw* in his name and stated he was the son of the ruler of Naranjo and lady of Yaxcha (Stuart and Houston 1989, 87; Reents-Budet 1994, 55). He was not, however, the likely consumer of the vessel despite being a member of the royal family, meaning that investigating the consumption of such objects is equally important as investigating their production and distribution.

2.3. Ancient Maya elite goods: exchange, consumption and value

In the archaeological record the presence of certain items or attributes is used to identify the elite groups. Likewise, the lack of these criteria can be used in identifying those who are not elite (Chase and Chase 1992, 4). Such general criteria include the presence of luxury goods, trade wares, exotic materials, material representation of elite ideology, elaborate architecture and special treatment of individuals in death (Guderjan et al. 2003, 20; Chase 1992). However, the judgment of what indicates 'luxury' or 'elaborate'

is often dependent on the individual interpretation of each site and thus can vary from site to site (Chase and Chase 1992, 5). For instance, polychrome pottery is often interpreted as an elite item (Coe 1975; Ashmore and Sharer 1978; Sullivan 2002; West 2002) even though fragments of polychrome ceramics are also found on the peripheries of sites usually disassociated from elite presence. For instance, bichromes and polychromes dated to the Early Classic and Late Classic, as well as some 'fine wares' of the Terminal Classic, are found in significant quantities across a variety of contexts at the coastal and river sites in Belize and Guatemala (Graham 1994, 197-217, 232; Graham and Pendergast 1989, Demarest et al. 2014, 200-201, 205-210). This means that the concepts of 'elite', 'luxury' and 'prestige' items have to be better defined for the contexts of ancient Maya material culture. One of the things that seems to distinguish 'luxury' from 'non-luxury' and 'prestige' from 'non-prestige' objects is their mode of circulation in the society. Therefore, in order to start pinning down those definitions in the current research, I will turn to the theories of object circulation and the theories of value.

2.3.1. Theory of gifts and commodities

The two most discussed modes of object circulation are gift-giving and commodity exchange. Gifts are traditionally defined as inalienable objects transacted by people who are non-aliens, meaning people who have existing social ties or have social agenda behind the gift exchange (Gregory 1982, 43). In contrast, commodities are alienable objects transacted by aliens, meaning people who have primarily economic motives without social or political agenda. Gifts are used to create and establish social relationships, dependencies and obligations (Mauss 1990). Through gift exchange the relationship between the subjects of the reciprocity is being established; the transactors are in a state of reciprocal dependence (Gregory 1982, 12-19). Through gifting, the

transactors not only give away objects, but are also meant to give away a little bit of themselves; hence, these objects are often considered inalienable. Inalienable objects are those that are intimately connected to their owners, but they often succeed their owners through time which makes it essential they be preserved through transfer. That is how kingship is legitimized in each generation – through the transmission or gifting of inalienable possessions such as land rights, material objects, titles or mythic knowledge (Weiner 1992, 7-37). Among the ancient Maya, an emblem glyph, which gave a ruler rights to a specific polity, is an example of transferrable inalienable possession – political legitimacy – of the ruling dynasty. These kinds of possessions gain their distinction from other things thanks to their particular histories, for example, having prestigious origins, divine right or belonging to the great ancestors (Weiner 1992, 36-37). As Kopytoff (1986) suggests, the biographies of things are what gives them their specific value, and even though he is talking about commodities, this argument seems particularly true for inalienable possessions.

Commodities, on the other hand, are broadly defined as items with use value and with exchange value (Kopytoff 1986, 64; Gregory 1982, 10; Appadurai 1986, 13-16).

However, as can be the case with gifts, objects are not always commodities, nor are they perceived as commodities by different parties at any one time (Kopytoff 1986, 64). As Appadurai (1986, 13-16) proposed, to consider a thing a ‘commodity’ it has to, at any phase of its career, meet the requirements of a ‘commodity candidacy’. The ‘commodity candidacy’ refers to standards and criteria (symbolic, classificatory, moral) which are used to define the exchangeability of things in any social context. The ‘commodity’ then, if deemed an appropriate candidate for a particular exchange, can enter the ‘commodity phase’ (exchange) and the ‘commodity context’ (social area of exchange).

Thus, a 'commodity' is not a kind of thing, but rather a phase in the life of some things (Appadurai 1986, 17) defined by its appropriateness for exchange.

The exchange value is an intrinsic and defining characteristic of a commodity and is the quantitative proportion in which use-values of one sort are exchanged for another sort.

Thus, the commodity exchange establishes a relationship between the objects of transaction (the commodities) rather than the subjects of transaction (people taking part in the exchange) (Gregory 1982, 11-19). Because of this characteristic, commodities are often perceived as alienable objects as they are not utilised to form particular social relations. They are in common circulation between independent transactors and do not form indebtedness and dependencies, as in the case of gift exchange.

There are, however, certain critiques to the categorization of gifts and commodities into inalienable and alienable objects respectively. According to Gell (1992, 146) it is the social context of transaction that distinguishes gifts from commodities, and not the character of the relationships between people and things (alienable versus inalienable) or between people and people (independent versus dependent). Gifts are thus usually associated with contexts of social reproduction such as marriage or alliance whereas commodities are involved in transactions defined as 'trade', 'barter' and the like. When speaking of inalienable objects, many anthropologists agree that they are the possessions that are most difficult to give away and so people tend to hold on to them and keep them outside the circle of exchange (Weiner 1992, 6, 150). If that is so, it is likely that not all gift exchange involved transactions in objects that are inalienable simply because people did not want to circulate their intimate possessions. The grandeur and importance of the social setting of a particular gift exchange was likely to have had the most influence over the types of objects being transacted and was probably the stimulus behind the circulation of the most 'precious' or inalienable of things. Likewise,

the particular social, economic or political situation of individuals can force or coerce them into entering a barter or commodity exchange transaction using their intimate possessions – the inalienable objects. Jacques Maquet (1971, cited in Appadurai 1986, 16) distinguished these types of commodities as ‘commodities by diversion’ which are objects placed into a commodity state even though they were originally specifically protected from it; or ‘commodities by metamorphosis’ which are objects intended for other uses that are placed into the commodity state. He also notes two other types of commodities, such as ‘commodities by destination’ – objects intended by the producers principally for exchange – and ‘ex-commodities’ – things retrieved from the commodity state temporarily or permanently. ‘Ex-commodities’ have the potential of becoming gifts, or inalienable possessions permanently taken out of circulation (for instance, as ritual or burial offerings).

In archaeological terms the context of exchange of goods is rarely possible to reconstruct. Therefore, my research will focus on identifying the goods most likely to be of ‘prestige’ and ‘high-status’ value, which are the likely candidates for ‘inalienable’ possessions, and also the ‘lower-status’ objects which were the likely ‘alienable’ possessions. To arrive at the most helpful and appropriate definitions for the classification of these different kinds of objects, it is crucial to explore the theory of value in anthropological research.

2.3.2. Theory of value

The value of things has always been a problematic concept in anthropology and archaeology, especially because it tends to be influenced by the Western capitalist view of the economic value of material things. Marx developed a theory of value in which he argued that the value of commodities is derived from human labour that went into their production. However, because the production and producers are distanced from the

consumers in the capitalist market, the production process is forgotten and it seems as if the value is naturally embedded within the qualities of the object itself (from Graeber 2001, 26). Appadurai (1986, 3-5), on the other hand, places the economic value of things not in their production but in their exchange. For him objects do not have absolute values, but the demand for these objects forms the basis for real or imagined exchange (of things and of sacrifices, because through exchange a person sacrifices one thing for another) that gives the object its value. The value of an object can be measured by the degree to which the potential consumer and transactor wants it (Graeber 2001, 31), which is in line with the theories within modern economics (for instance Damodaran 2012, 1). Thus, in this sense, value is a temporary and unstable concept; it refers to things in motion and is determined by the social context of transaction.

Strathern (1988, 142-143) talks about value in yet another manner, as the meaning or importance a society ascribes to an object, as opposed to individuals ascribing values to objects on a one-to-one basis. The value is given through defining the object by placing it in a broader system of conceptual categories of the society. It is about making the meaning of things visible to others. Only through the process of recognition of the meaning is value ascribed to the object (Graeber 2001, 47). Munn (1986, 269-271) defines values as the process by which an individual's 'potency' or his/her capacity to act is transformed into concrete and perceptible forms; the value of things emerges from actions behind their production, circulation, exchange, consumption, maintenance, exploitation for social bonding and the like. In this sense, all the investment of time and energy, intelligence, concern, calculation and strategy, regardless of whether the object was gifted or exchanged, creates the value of material goods. Thus, the recognition of the meaning is simply a recognition of the value that already exists in the object as its potential for past and future human action. This viewpoint relates closely to *The*

cultural biography of things by Kopytoff (1986) in which all objects can be ranked as different kinds of things, and as different kinds of commodities based on their histories – or as Munn called it – the investment of action they’ve experienced.

Different approaches to defining ‘value’ also prevail in archaeological research. Objects which are classed as ‘social valuables’ in Chavín de Huántar, Peru – that is a class of materials of exceptional value – are usually recognised by the distant provenance of either the raw materials they were made of or the provenance of the objects themselves and by the level of craftsmanship required for their production (Burger 2012, 305). A study of valuable objects in ancient Sichuan emphasises the need to approach the study of value as a holistic analysis of several factors: raw material, labour investment, the identity of producers, the identity of consumers, the divisibility or “commodifiability” of an object, and object’s capacity to accumulate history (Flad 2012, 306-313). Context is considered equally significant when taking the viewpoint that value is constituted in a relationship between subject and object. Value then always needs to be reviewed and embedded in the appropriate cultural and historical context (Bray 2012, 395). Cummins (2012, 419) comments how certain materials seem to have intrinsic qualities which give them universal values; for instance, gold seem to have carried comparable value for Spaniards and for the people of the Americas. Other materials have their values determined by the cultural norms and the dominant fashions of the times. For instance, feathers carried high values among the Aztecs; however, the increasing demand for this material changed the nature of its exchange at marketplace and with time the ‘monetary’ value of feathers or feather objects outstripped their ‘social’ value (Cummins 2012, 419-420).

In this mixture of contradicting theories of value, David Graeber in his book *Toward an anthropological theory of value: The false coin of our own dreams* (2001) states, after

duly reporting and describing viewpoints of other researchers, that value arises from creative action, but this creative action can never be separated from its concrete, material medium. This implies that the value of an object, however it may be defined through creative actions of others, through ideology, religion, or symbolism, cannot, in the end, be separated from the material medium that is the object itself, its materials, its shape, colour and all its physical attributes. Thus, as the methods used in this research will show, the materiality of objects (mainly their physical appearance) will serve as the basis for establishing the possible creative actions involved in the careers of these objects. These creative actions will suggest the objects' relative values, their possible status as alienable or inalienable objects, their most probable functions as utilitarian, luxury or prestige objects, and whether they were likely to have been exchanged as commodities or gifts.

2.3.3. Some definitions

Following the above discussion, the objects of higher or lower value can be defined on the basis of the intensity of time, skill, intelligence, and effort invested into their production, maintenance, acquisition, and consumption, and on the basis of the meaning given to the objects as a result of these creative actions. 'High-value' objects are those with most investments and those with longer biographies enhancing their meanings to their owners. 'Lower-value' objects are characterized by less time, skill and effort invested in their careers or life-cycles and shorter biographies. Low-value objects also have higher replacement rates because objects with less intensive investments can be more readily reproduced and replaced.

Luxury objects can then be defined as a group of objects with the highest values in a particular social and historical setting, thus making them most 'costly' or requiring the most sacrifice to obtain. Luxury objects would thus be limited to individuals with

sufficient ‘purchasing power’ (Hirth 1998, 456). Luxury objects are also often goods that are complicated to acquire, convey complex social messages and require special knowledge for appropriate consumption (Flad and Hruby 2007, 10).

Prestige goods, however, cannot be defined strictly on the basis of their economic ‘value’, they must be set within the social and cultural contexts of their use (Flad and Hruby 2007, 10). In my research, ‘prestige’ is applied to objects used in status-affirmation and status-reinforcement (that is, for distinction among social groups, after Bourdieu 1984), and which are used for creating alliances and social bonds. Prestige goods often show distribution restricted only to one group in a society (Peregrine 2000, 62). Prestige objects require specialized and non-common knowledge to produce and understand, and carry elite symbolism.

‘High-value’, ‘luxury’ and ‘prestige’ goods do not have to equate to the same set of items, even though they often do. A ‘high-value’ item, an object showing significant investment of work in its production and/or care, does not have to be a ‘luxury’ or a ‘prestige’ object. Likewise, an object of ‘luxury’ or ‘prestige’ in certain contexts or during a specific time period might not be considered luxurious or prestige in other contexts. Thus, archaeologically, the status of different goods which were circulated within a society at any one time can only be determined through a holistic view of assemblages and through the study of contexts associated with the objects’ use and deposition.

2.3.4. Kinds of possessions in the ancient Maya context

The recognition of inalienable objects in the archaeological record of ancient Maya society is always highly dependent on the context of deposition and discovery. For instance, various kinds of burials containing objects deposited with the dead provide

some of the best evidence of inalienable possessions because the objects were probably intimately connected either with the person in the burial or his/her family. It can, of course, be the case that the objects, such as ceramic vessels, jade and shell ornaments, or figurines, were deposited in the burials for symbolic purposes rather than owing to the particular connections between these objects and the people involved; or the objects were deposited for both reasons. It is, however, generally accepted that the objects interred with the dead had special meaning to the people involved in the burial ritual (for example, some ceramic vessels deposited in burials show signs of wear and were potentially used by the deceased and his or her family, Reents-Budet et al. 1994, 197; Newman 2011, 495).

The intensified use of inscriptions on objects during the Late Classic period provides archaeologists and epigraphers with additional information on the perception of ownership and possible circulation of gifts and inalienable possessions. The best examples of this trend are highly decorative polychrome vases, often bearing textual information alongside pictorial representation of elite and divine scenes and symbols (Reents-Budet 1994, 7; Reents-Budet et al. 2000, 117). The Primary Standard Sequence (PSS) is one of the textual components found on these vases and is the most stylised and standardised form of text in terms of the glyph components involved. These components include, among others, the name of the owner of the vase, the form of the vessel, sometimes the contents for which the vessel was intended, the technique of decoration and the signature of the artist (Stuart 1989, 149-160). PSS is a dedicatory text and a formulaic expression for the name-tagging of various objects (Stuart 1989, 155). Some of the most iconic scenes painted on these polychrome vases depict the rulers engaging in various rituals and events in their palaces. Other pictorial themes include deities and divine beings in the setting of their myths or engaging with the living (Reents-Budet

1994, 234-283). Both of these thematic representations were clearly used for the benefit of establishing and legitimating the status and authority of the commissioners of these vessels, making them examples of prestige goods. The very presence of personal names and portraits on these objects makes them inalienable possessions in that the connection between the object and the person was clearly established – one of ownership. The fact that these vessels were often involved in gift-giving rituals among the elites further highlights that they had the potential to create social relationships not only between individuals but between entire dynasties. The craftsmanship of some of these ceramic vases clearly shows that special skills, knowledge and a great amount of time and energy were invested in their production. Although not all the actions involved in the careers of the vessels are retrievable archaeologically, the great care and investment at the stage of production allows us to infer that further maintenance, consumption, display and exchange of these objects were given just as much care and effort as their production, making these vases among some of the most highly valued, luxury and prestige objects for ancient Maya elites of the Late Classic period.

The creative actions which led to the production and popularity of polychrome vases also contributed to the creation of distinctive local and regional styles. The emergence of distinctive styles has been explained by the conditions generated by the socio-political changes of the Late Classic, when the people at the heart of the emerging polities or factions wanted to distinguish themselves (Reents-Budet 1994, 91-92; Demarest 2004, 110). Competition among the elites from different polities, as well as within polities, resulted in the demand for special, original, rare and difficult-to-get but easily recognizable items. The local and regional styles of these prestige goods were definitely readily recognizable among the elites from all Maya polities thanks to the fact that they functioned as ‘social currency’ (Reents-Budet 2000, 117). That some of the

most exquisite examples were most likely produced by few individuals (as studies of glyph calligraphy showed on examples of Codex-Style Dynastic Vases, Martin 1997, 850) means that there were even fewer of such items in circulation, making them even more precious.

The tastes of the elites were defined by commissioning, exchanging, gifting, acquiring, and the consumption and use of objects such as the stylistically distinct polychrome vases of the Late Classic. The elites classified these objects as theirs to consume and the objects in return distinguished elites from other social classes and provided them with socio-political legitimacy and power ('Taste classifies, and it classifies the classifier' Bourdieu 1984, 6). When tastes of the higher social classes materialised in physical objects, other social classes either created their own styles and tastes in opposition to the authority of the elites, or they emulated these tastes to the best of their own abilities in a bid to associate themselves with superior groups. An example of such emulation was found at the site of Buenavista del Cayo, Belize, where an excavated workshop revealed hundreds of vessels painted in the characteristic Holmul Style, but where none of these locally-produced objects was of equal artistry as the Holmul-style vases from Naranjo or Holmul. These vases locally produced at Buenavista del Cayo were compared to the Buenavista Vase, a Holmul-style vase also found in Buenavista del Cayo but produced by a renowned master artist of Naranjo. The Buenavista Vase was probably gifted to the ruler of Buenavista del Cayo by the royalty from Naranjo (Reents-Budet 2000, 96). The emulation of the regional style of Naranjo at the local level and in such large numbers may indicate that these vessels were used and distributed by the local Buenavista elites to the local nobility as a reflection of their socio-political aspirations, and to appear equal to the nobilities of centres such as Naranjo or Tikal (Reents-Budet 2000, 96). However, the lesser painting quality indicated that these vessels are not the 'authentic'

Holmul-style vases, thus suggesting that Buenavista del Cayo held a lower economic or socio-political position in relation to the Naranjo or Holmul sites.

The issue of ‘authenticity’, in such cases as the Buenavista Holmul-style vases, can with time replace the issue of exclusivity of the elite objects. As Appadurai (1986, 44-45) noted, the changing technologies of production in some instances may empower the local producers and consumers to take over the distribution of once-exclusive objects. In such cases the only way to preserve the function of these objects as prestige items is to apply the criteria of authenticity whereby the original sources of the objects bear higher-status than the emerging local markets. Such ‘politics of value’ derive from the constant suppression and control over distribution of objects by the elites, and constant resistance and expansion of this distribution by lower social segments (Appadurai 1986; 57; Graeber 2001, 32). Similar arguments can be applied to the emergence of pseudoglyphs, in which the issue of authenticity does not involve a specific place of production but a specific knowledge and skill for the production of glyph text decoration. In their shape and appearance, pseudoglyphs resemble the real glyphic writing but do not convey any textual information. The presence of pseudoglyphs could have increased the value of objects in communities that lacked the social or economic capabilities to acquire or produce vessels with real glyph writing as an attempt to imitate the styles and tastes of the elites (MacLeod and Reents-Budet 1994, 139-141). However, as pseudoglyphs are barely imitations of real writing and of the high-status surface decoration, objects with pseudoglyphs are lower in status when the rules of authenticity are applied. It is even suggested that some of the simpler polychromes without functional glyphs and fine brushwork were circulated regionally among non-elite households, possibly through market exchange, as opposed to the limited and controlled circulation of the ‘elite’

polychromes, which were gifted or presented as offerings or tribute (Chase and Chase 2013, 87; Sullivan 2002, 211).

The context of consumption of objects by the elites also heavily influenced the products' finish, imagery, textual content and other attributes. Elites had a variety of public and private responsibilities, thus the domains of public and private consumption served different purposes. Such differences can be seen in imagery on monuments and on ceramics. On monuments in public spaces, rulers are mostly represented as warriors and conquerors, often in extravagant ritual attire (for public consumption); and on painted ceramics, royalty and high-rank individuals are mostly depicted as scribes and diplomats, in much simpler clothing (for private consumption), (Harrison and Andrews 2004, 123; Inomata 2006, 810). Parmington (2011, 174-177) successfully argues that there were visible differences in how the rulers were portrayed on monuments and artwork in public and private spaces of the palaces. In his study of the Palace and Cross Groups at Palenque, he concludes that rulers tend to be portrayed authoritatively in public imagery; in private portraiture they appear in a more understated manner, in understated clothing and even as subordinates to deities (Parmington 2011, 177). However, the so-called 'symbols of elite authority' (Chase and Chase 1992, 13) were likely to be as much for the public displays of power as for the more intimate and private displays. For instance, the carved monumental art with texts and elaborate scenes in the palaces at Yaxchilan were not likely to have been a statement for the general public, but a private statement for a restricted group of individuals on the ability of the palace dwellers to command the labour of an artisan (McAnany 2010, 181).

Ceramic vessels were used in a variety of contexts in both public and private domains. They were used as 'social currency' during public and private feasting events and during rituals; they were deposited in burials of all social classes and as offerings or

caches in elite and non-elite contexts. They were also used for domestic activities such as food preparation, cooking, and food and drink consumption. The context of use dictated the type of objects to be used. Societal and cultural norms would influence the choice of objects especially in cases of official affairs, and political or religious events. That is one of the reasons why the distinctive ‘elite’ ceramics (such as polychrome painted vases with glyph inscriptions and royal symbols) are usually perceived as associated with the official affairs of the elites, such as the public ceremonies or more private events for the chosen individuals from within and outside of the elite household (for instance, diplomats, visiting elites). The pottery for cooking and other private domestic activities in elite households probably did not differ much from what was available to the general public. There is no evidence to propose that elites used different vessels for their domestic affairs than the non-elites (with possible exception of serving pottery). In fact, what is usually used as a relative indicator of socio-economic status at numerous Maya sites is the presence of ‘elite’ pottery in a household context, rather than the absence of utilitarian or ‘coarse’ pottery (Masson 2002, 12). Thus, it can be suggested that the class-distinguishing objects of consumption will pertain to their intended function, their context of use, and the public status of their owners rather than the private affairs of the households.

2.4. Ancient Maya elites and their built environment

No discussion about ancient Maya elites can be undertaken without mention of their architecture, their beautifully decorated residences and monumental public buildings. Architecture is the first visible indicator of status and is the one most commonly used by Maya archaeologists. Architecture is, however, only one part of what is a very extensive Maya built environment, which in full encompasses such forms as: temples, palaces, ballcourts, patios, reservoirs, roads and causeways, tombs, caches, monuments, formal

and informal embellishments, as well as dwellings of common people, rural terraces and field systems, sacred caves, burial places and landmarks (Webster 1998, 6).

2.4.1. Variety of elite architecture

The traditional view is that elite architecture is located at the epicentre of a Maya city and forms its civic-ceremonial core. Spatial indicators of elite status can be summarised as consisting of: degrees of restricted access to bounded exterior spaces (plazas and courtyards surrounded by masonry buildings), location in relation to the city's centre, location in relation to critical resources, and the viewshed, which evaluates what can be seen from a certain vantage point within the architectural compound (Guderjan et al. 2003, 19). The high-status architectural complexes – places of royal and elite activity – are often characterised by masonry architecture, vaulted chambers and tombs, high platforms, and sculpted and/or painted iconographic or historical imagery. They generally include palace structures organised around plazas and associated temples next to open spaces for public gatherings. Palaces are defined in Maya architecture as 'large, range-type, vaulted masonry multi-roomed structures, or as architectural groups composed of several such multi-room structures surrounding small plazas [courtyards] or patios' (Kowalski 2003, 204; Parmington 2011, 10). Temples mark some of the most restricted spaces in ancient Maya cities, the places of gods and ancestors which were too dangerous to be entered casually by anyone from the general public (Schele and Mathews 1998, 29). They are defined as elevated buildings or superstructures, often on multi-terraced platforms, that contain one or a number of small chambers (Kowalski 2003, 204; Parmington 2011, 11, Loten and Pendergast 1984, 14).

Studies of numerous sites (Caracol by Chase 1992; Blue Creek by Guderjan et al. 2003, among others) show that, while monumental architecture is in fact often located at the epicentres of Maya cities, other indicators of elite architecture are commonly found

away from the sites' cores. Thus, the attributes of elite architecture, such as presence of tombs or masonry construction and restricted access, should be evaluated in more detail to distinguish those aspects which are reserved for higher elites and royalty and those available to the wider nobility.

It might be that some aspects of Maya architecture were linked to the elites' public duties rather than the private everyday lives of the elite households. The masonry constructions at the site centres might have served for purely public and administrative activities of the elites while the private households and sleeping quarters were located outside the city centres. Thus, these peripheral elite complexes might represent a spatial division between one group's public and private affairs rather than separate elite groups inhabiting different central and peripheral compounds.

Monumentality and the presence of monumental art seems to be one of the criteria which distinguishes the highest elite classes. The construction and reconstruction of monumental architecture created physical spaces which affected the social structure of community, especially in reference to fields of power (Rowlands 1993; McAnany 2010; Johnston and Gonlin 1998, 146). The strategic placement of monumental art in public spaces functioned as a form of 'signposting' for the elites to communicate function and hierarchical divisions to the masses (Parmington 2011, 174). Moreover, raising structures on top of high platforms deliberately separates them from the public sphere; thus, many of these spaces would become 'removed' from public use and they could only be entered by a limited number of eligible individuals. Similarly, framing courts and plazas creates 'inscribed' space with equally limited access (Miller 1998, 187). The concern to re-describe the geopolitical landscape through monuments and/or to destroy previous accounts suggests the construction endeavours of Maya kings functioned as memorials which played an active role in reproducing authority and directing access

(Smith 2003, 136). For instance, it is suggested that stairways are associated with signs of control, social hierarchy and inequality (Miller 1998, 218). As noted by Houston (1998b, 343), the verticality of pictorial representation of social rank might have been mirrored during rituals with the use of staircases. In Maya art, the higher the seated figure, the higher the rank; thus, the tall raised platforms of palaces and temples might indicate the higher social positions of those who could ascend above the social classes down below. Moreover, Maya architecture was razed, modified, abandoned or completely covered over on a regular basis. This indicates the great plasticity and transitory character of the Maya built environment, which often involved enlarging of the platforms and structures both horizontally and vertically (Webster 1998, 15-16). By constructing taller and taller platforms with longer staircases, the royalty and nobility not only distanced themselves from the lower social classes, but also generated more space between the highest and the lowest sphere, the middle of which could have been occupied by intermediate social strata.

All of these constructed places provided performance space for rituals and public ceremonies, which both included and excluded social groups (McAnany 2010, 143; Inomata 2006). Classic Maya built environments are consistently depicted as a backdrop for performance, rituals, tribute giving, ball playing and many other public events (Webster 1998, 26). Most of these events included the use of spaces such as plazas and open courts, which formed voids appropriate for the reception of surrounding structures and for witnessing the variety of rituals (Miller 1998, 191). As argued by Inomata (2006, 810, 819), the construction of large plazas – large open spaces surrounded by temples and other symbolically charged buildings – and wide causeways, which both served to display representations of rulers on stone monuments, indicate that the Classic Maya placed a significant amount of emphasis on the visibility of rulers and

the variety of rituals and public events – the ‘theatrical performances’ – they sponsored, organized and took part in. He also suggests that these theatrical events might have divided the community by separating those who were allowed to participate in or watch these ritual performances from the less privileged, as is evidenced in the various sizes of plazas at different Maya centres. A lot of activities in ancient Maya cities took place outside as part of everyday life (Sharer 2009, 164); thus having an appropriate medium to encompass the various events in exterior spaces was crucial.

2.4.2. Courts, palaces and elite residences

Courts, in both social and architectural terms, were subject to prominent social hierarchy, hence the distinction between Maya ‘royal’ and ‘noble’ courts (Inomata and Houston 2001; Christie 2003; Guderjan et al. 2003). The hierarchy likely involved several levels of elite classes which would have affected the size and appearance of the living spaces and the performance spaces, and the numbers of privileged individuals allowed into the restricted areas of the cities. At Blue Creek, for instance, four different elite architectural complexes are distinguished at the site, each proposed to represent a different class: 1) Blue Creek’s most powerful ruling lineage, 2) elites one step removed from the rulers (possibly trying to establish themselves as ideological elites), 3) the economic elites, 4) the ‘middle’, managerial class who most likely served the ruling families and ‘upper’ classes (Guderjan et al. 2003, 38). It is important to remember that courts have dual meaning: they represent the people of a lineage and persons directly associated with that lineage; they are also defined as places where kin groups lived and performed their duties (Inomata and Houston, 2001). Thus, the hierarchy of social lineages bound within royal and elite courts is likely reflected in the ‘hierarchy’ of architectural complexes they occupied and the ‘hierarchy’ of objects they possessed.

Some scholars make the distinction between royal palaces and elite residences, in which the palaces are larger in size, are built of masonry, are decorated with a greater amount of sculpted or painted decoration and are located closer to the ceremonial core of the city than elite residences (Christie 2003, 1). Palaces are places where ruling families lived and conducted governmental business. To this extent, elite residences are similar to palaces, as they were also a place for both private and public activities. Palaces may be the private residences of the rulers but, like their occupants, they play public roles (Pillsbury and Evans 2004, 1). By the 1960s, most archaeologists recognized the multiplicity of palace functions: palaces served as living spaces, storage facilities for precious goods and religious paraphernalia, and housed political events (Christie 2003, 3-5). The residential function of palaces was especially difficult to identify archaeologically, but the evidence from Classic period palaces at sites such as Palenque, Tikal, or Uaxactun, seems to indicate that domestic and residential activities took place alongside the public events inside the palace compounds (Liendo Stuardo 2003, 194).

The multiplicity of functions can be more confidently assigned to buildings with complex internal and external features, multiple rooms and various architectural characteristics (Harrison and Andrews 2004, 123). Palace complexes differed from site to site, and even within sites; the term does not refer to a uniform set of architectural designs or functions (for instance Webster and Inomata 2004, 157). At the Central Acropolis of Tikal, the structures within the palace complex range from single-room buildings to three-storied structures with multiple rooms on each story (Harrison and Andrews 2004, 114). The buildings were heavily dependent on the history of the built environment at the location, as palaces were often the end results of gradual accumulation of architectural projects commissioned by successive rulers (McAnany and Plank 2001, 84; Parmington 2011, 11). At Tikal, the throne rooms, usually found

within the ruler's palace residences, were gradually replaced by separate single-room throne or reception buildings. This indicates that with time the governmental activities were gradually separated from the domestic domain of the ruling family (Harrison and Andrews 2004, 124). At Copan the king's residence buildings were not public as such, but rather they were a mixture of household and lineage houses and open spaces (Harrison and Andrews 2004, 128). At Aguateca's subroyal elite structures, material evidence (such as storage, cooking and serving pottery, obsidian blades, lithic tools and bone artefacts) indicates domestic activities representative of residences, whereas objects such as jade and shell ornaments suggest the wealthy status of the inhabitants (Webster and Inomata 2004, 167). The central rooms of these elite buildings, however, were probably used for public and administrative purposes, for conducting meetings, receiving visitors, or undertaking craft production, which in many ways would have mirrored the range of activities carried out inside royal palace structures (Webster and Inomata 2004, 173). At Caracol, the proximity of architectural compounds of lesser elites or middle classes to agricultural terraces additionally suggests that some members of these households were likely involved in agricultural activities and production (Chase 1992, 40).

It has been argued that what gives meaning to palace structures is the presence of the kings or the nobles who occupy them. The presence of the ruler's or noble's body symbolically transforms the space, thus making the particular structures socially, politically, and ideologically distinct from other structures devoid of royal or elite presence (Houston and Cummins 2004, 359-384). The strength of the image of the royal body is evidenced by the numerous public monuments, displaying kings and queens in royal ritual attire, placed in plazas and commemorating important historical events. Bound by monumental and elaborately decorated architecture, the body of the ruler

seemed to have been at the centre of public gatherings and ritual performances, both symbolically and often physically (Inomata 2006, 818).

Kings and queens and their families were not the only individuals inhabiting royal palaces. The royal courts, or people occupying the spaces of royal palaces, are thought to consist of a number of individuals of different rank and occupation. These include royal family members, advisers, guards, assistants, artisans, craftspeople, servants and administrators, and are all centred around and focused on the ruler (Inomata and Houston 2001, 6-7; McAnany and Plank 2001, 86). To some extent, this is also the case with the members of the noble courts (the elite residences), where the head of the household is the focal point of the court. Because of such complex composition of royal and noble courts, it is essential to recognise they included not only the members of the elite class but a full array of individuals of different social status who interact within the cultural norms and mutual understandings and obligations of the court (Inomata and Houston 2001, 7, 11; Graham 2002, 413-414). The complex networks of interaction can be, to some extent, compared to those of kin-based and other non-royal households within the Maya area (McAnany and Plank 2001, 86).

Moreover, apart from providing the setting for residents – the royal or elite family and all the associated individuals – it is proposed that courts provided locations for a number of temporary occupants with varied agenda, such as courtiers, religious visitors, scholars, visiting dignitaries and diplomats, and support staff (D’Arcy Harrison 2003, 106). Thus, when studying the royal and elite complexes, it is important to bear in mind all of their permanent and temporary inhabitants, because all individuals were likely to have influenced the physical and symbolic spaces of the studied complexes and the assemblages found within them.

With recent evidence, it has become apparent that royal and noble architectural complexes were locations for a variety of activities, both public and private, and which involved a varied number of people. Complexes housed not only consumers of prestige or luxury goods, but also consumers of utilitarian, domestic objects as well as producers of both. For this reason, appropriate theoretical and practical frameworks have to be designed to shed light on the socio-economic and political dimensions of inhabitants of palace and elite complexes at Maya sites.

CHAPTER 3. El Zotz in its regional and historical context

The socio-political composition of a polity's community and its various authority factions is highly dependent on the broader politics of its region and its relationship with other states, just as the regional politics are dependent on the local-level affairs. Putting the regional developments within their historical context provides researchers with a valuable overview of the political, economic and social patterns of change and stability, which all affected the local decision-making groups and the wider communities of states. The discussion outlined below serves to put the site of El Zotz and its changing settlement and socio-political patterns within their regional and historical context. The patterns described for the site of El Zotz are only briefly presented in the paragraphs below and are based on the results of archaeological research of the first phase of El Zotz Archaeological Project. The more detailed picture of the site's history will arise from the results of the current research and will be discussed further in this work in conjunction with investigations of other scholars working at El Zotz.

3.1. El Zotz in the Buenavista Valley

El Zotz is located in San Miguel la Palotada Biotope in the modern state of Petén, Guatemala. It is situated on the northern ridge of the Buenavista Valley which forms the only natural east-west corridor in the area connecting two regions of intense Maya settlement (Houston 2008a, 4). The region lies between four main Maya rivers: the Three Rivers basin to the northeast, the Belize River to the southeast, the Pasión to the south, and the San Pedro River to the west (Beach et al. in press). The Buenavista Valley is a large structural valley that would have formed a natural passage between the Gulf and Sea (Beach et al. in press). To the east, the valley opens into the bajos and

uplands of the Tikal and Uaxactun area, and to the west to the Motul de San José and El Perú-Waka area. Tikal is located 24 kilometres east from El Zotz, Uaxactun is located about 26 kilometres to the north-east, Motul de San José is located about 34 kilometres to the south-west, and El Perú-Waka is located 50 kilometres to the west (Figure 3.1).

The El Zotz Archaeological Project investigated a number of other sites found within the Buenavista Valley; these are El Palmar (14 kilometres east from El Zotz), Bejucal (7 kilometres north-east from El Zotz), and a number of smaller dispersed settlements such as La Avispa (Figure 3.2, Matute and Doyle 2008; Doyle and Matute Rodríguez 2009; Doyle and Piedrasanta 2011, Doyle and Piedrasanta 2012; Doyle and Piedrasanta in press; Doyle 2013; Garrison and Garrido 2009a, Garrison and Garrido 2009b; Garrison and Beltrán 2011; Garrison and del Cid 2012; Garrison et al. 2016). The sites in the Buenavista Valley were located near natural water sources, such as aguadas, bajos or civals. The so-called aguadas, or smaller depressions, found at central El Zotz, the El Diablo complex, and Bejucal were sometimes altered and paved with cut stones in order to improve and maintain these water reservoirs at Maya sites. Civals are a local term for grassy (herbaceous) wetlands (Wahl et al. 2006, 382, 385) and the site of El Palmar is located on the edge of such a cival. It is a large example of water basin during wet seasons and a grassy wetland during dry seasons (Beach et al. in press).

The site of El Zotz is composed of several complexes which form an urban site core in the valley and several detached groups on the nearby hills. The core of the site consists of the Acropolis complex, the East Group, the South Group, and two plazas: the Plaza of the Five Temples and the Main Plaza. The dispersed complexes are Las Palmitas and La Tortuga to the north of the core and El Diablo and El Tejón to the west (Figure 1.1). El Diablo, El Tejón and Las Palmitas are three architectural compounds located on the peaks of hills above the core of El Zotz and overlooking the valley floor (Carter and

Gutiérrez Castillo 2012; Beltrán and Román 2012; Piedrasanta 2012). The view shed from the top of Str. F8-1 at El Diablo is so extensive that the main pyramids of Tikal (Temples I, II and IV) can be seen above the canopy on the horizon. The dispersed settlement of El Zotz is the result of a long history of occupation and was dictated by local and regional political networks. The changing patterns of occupation at El Zotz are a testament to its location in one of the most politically dynamic areas of the Preclassic and Classic periods in Maya history.

3.2. The Preclassic Period

Monumental cities were constructed in the Late Preclassic period (ca. 400 BC – AD 250) in the regions of today's northern Guatemala and Belize, including sites such as El Mirador, Nakbé, Cerros, Lamanai, Calakmul, Cuello, Nohmul (Demarest 2004, 83). Some of these, like Nakbé, have their monumental origins in the Middle and perhaps even in the Early Preclassic periods. The two most prominent centres of the northern Petén, El Mirador and Nakbé, had some of the largest and most complex civic-ceremonial centres, making them the giants of the urban Preclassic Maya world. By the end of the Middle Preclassic period, some of Nakbé's temple platforms were raised as high as 20 meters, and in the Late Preclassic they reached over 45 meters. At El Mirador the massive urban area with hundreds of residential platforms and two monumental acropoli covered 16 square kilometres with some platforms reaching the height of 70 meters (Demarest 2004, 82-84). The similarities in the architectural, artistic, iconographic, and symbolic features of these emerging ceremonial centres of the Preclassic in the Southern Maya Lowlands suggests interaction of the emerging elites of these centres and their active participation in the local and regional networks of interaction (Demarest 2004, 85).

In the Buenavista Valley, south of El Mirador and Nakbé, several Preclassic sites were found, namely the South Group at El Zotz, the sites of Bejucal and La Avispa, and the largest and most extensive Preclassic centre – the site of El Palmar (Doyle and Piedrasanta 2011, Doyle and Piedrasanta 2012; Kingsley and Cambranes 2011; Kingsley and Rivas 2012; Garrison and Beltrán 2011; Garrison and del Cid 2012; Garrison and Garrido 2009b; Doyle 2013; Garrison et al. 2016). The recent investigations by the El Zotz Archaeological Project presented strong evidence that the Buenavista Valley, which created a natural east-west trade corridor through the Southern Lowlands, supported significant populations in the Middle Preclassic period. The E-group at El Palmar, comparable to that found at Tikal, was first constructed during this period with later architectural expansions adding to the monumentality of the site. This suggests a significant increase in population and prosperity of this centre and the establishment of an early political authority in the valley (Doyle and Piedrasanta in press; Doyle 2013, 184-221).

At El Zotz the Preclassic constructions were found exclusively at the South Group, a relatively small complex in the south portion of the polity. Both of the Buenavista Valley sites were constructed close to water sources, such as a modified depression (*aguada*) near the South Group and the larger lagoon (cival) near El Palmar. The scale of the architecture at these two locations further emphasises the primacy of El Palmar in the Buenavista Valley during the Preclassic period, with its site core of approximately 40,000 square meters, as opposed to the smaller dispersed settlements such as the South Group of El Zotz with its platform area measuring approximately 2,500 square meters (Doyle and Piedrasanta in press; Doyle 2013, 14-19).

3.3. The Early Classic Period

The large centre of El Palmar on the valley floor was abandoned towards the end of the Late Preclassic period with a brief and small-scale reoccupation during the Early Classic. The South Group was also abandoned at that time and later reoccupied during the Terminal Classic and Postclassic periods. The focal occupation of the Buenavista Valley shifted towards hilltop locations of El Diablo and El Tejón at El Zotz and the site of Bejucal with a few complexes located at the feet of the hills, such as the Acropolis of El Zotz. This shift of occupation was probably triggered by changing political dynamics in the region after the decline of El Mirador at the end of the Late Preclassic period (ca. AD 250) and the emerging power vacuum of political instability (Sharer and Traxler 2006, 371). The hilltop locations for many of these new sites—houses of newly emerging Maya royal dynasties—were probably chosen for their defensive character considering the likely political conflicts in the region and for the added advantage of control over resources in the area.

After El Mirador's decline, a series of new powerful dynastic states emerged in the Maya Lowlands, including the great centre of Tikal and, later, its rival Calakmul (for instance, Houston and Inomata 2009, 105, Martin 2003, 4-6; Sharer and Traxler 2006, 301; Martin and Grube 2000, 26-27, 102-103). Widely mentioned by scholars (for example, Houston and Inomata 2009, 105; Sharer and Traxler 2006, 310; Martin and Grube 2000, 26) the earliest dated monument in the Maya Lowlands is Tikal Stela 29 with the Long Count date 8.12.14.8.15, corresponding to AD 292. It is on this monument that Tikal's emblem glyph is recorded for the first time, which marks the hallmark of Tikal's status as an independent capital and seat of a strong dynasty of kings. The origins of Tikal's dynasty, based on retrospective hieroglyphic records, could be traced probably to about AD 90 (Martin 2003, 5) which would correspond with

the decline of El Mirador. The fact that, at the beginning of the Early Classic period, so many of the Southern Lowland sites erected monuments (some of them dated) suggests that at least initially these new states were equal and independent. For instance, the site of Uaxactun erected at least 3 monuments (Stelae 9, 18, 19) between AD 327 and 378 (Martin and Grube 2000, 30; Valdés and Fahsen 1995, 203-205). The glyphic texts recorded on a wooden lintel from Str. M7-1 at El Zotz and from various polychrome vessels now in private collections allowed for partial reconstruction of the names of the *Pa' Chan* rulers (*Pa' Chan* is the ancient Maya name for El Zotz) of which there were at least five in the late Early Classic and the Late Classic periods (Houston and Arredondo Leiva 2008, 180-181). Such a political environment would have been conducive to conflicts among the new dynastic lineages, reflecting the factional competition among newly-emerging powers. An example of such early rivalry in the Southern Lowlands is the relationship between Tikal and Uaxactun (Valdés and Fahsen 1995, 197).

With time, however, Tikal gained a dominant position in the region and asserted control over its competitors, the local ruling dynasties, which is supported by several lines of evidence. On one hand, certain sites erected monuments commemorating the same events as Tikal (for instance Uaxactun Stela 5, with a date AD 378) signalling subjugation under Tikal's authority (Valdés and Fahsen 1995, 205). On the other hand, some of the other of Tikal's neighbours ceased to erect monuments in the later phase of the Early Classic period which likely also reflects their subordination to Tikal, but probably through different means of control (Sharer and Traxler 2006, 319).

In view of these novel developments in the geopolitical landscape of the Southern Lowlands at the beginning of the Early Classic period, it seemed necessary for the El Zotz emerging elites to take appropriate measures to protect their independent status. By

locating some of the high-status complexes in the mountains and away from the valley floor, the Buenavista Valley elites created defensible territory, likely in response to the emerging Tikal state only 24 kilometres away. This trend was mirrored at other sites in the region, for instance at Uaxactun (Román et al. in press; Valdés and Fahsen 1995, 199-201). While the elites relocated onto the hilltops, the valley was experiencing a period of intensive agricultural activity and probable increase in population as suggested by the palaeo-environmental studies (Beach et al. in press). In contrast to the Preclassic period, there is evidence for more concentrated farming (C₄ vegetation) in the Buenavista Valley, especially at the site of El Zotz, around the Early Classic and Late Classic floors (Beach et al. in press).

One of the most influential and puzzling events of the Early Classic period in the Central Maya Lowlands was the so called *Entrada*, or the ‘arrival’ of warriors from the great Central Mexican centre, probably Teotihuacan, led by a military figure *Siyah K’ak’*, in the year AD 378 (for instance, Houston and Inomata 2009, 106-107; Martin and Grube 2000, 29; Martin 2003, 12-15; Sharer 2003, 320-321; Stuart 2000, 478-481). From inscriptions on monuments at sites such as Tikal, Uaxactun, El Perú-Waka and Bejucal, it seems that *Siyah K’ak’* visited the site of El Perú-Waka first on January 8, AD 378 before proceeding west to Tikal which he reached on January 16 AD 378 (Stuart 2000, 478-480). David Stuart’s examination (2000) of the inscriptions recording the event of the *Entrada* illuminates several of its important features. On Tikal Stela 3 it is recorded that on the same day as the arrival of *Siyah K’ak’*, the fourteenth ruler of Tikal, *Chak Tok Ich’aak I*, died (Sharer and Traxler 2006, 322). Thus, it seems the ‘arrival’ of foreigners from the west refers to a type of conflict where acts of aggression were aimed at the ruling lineage of Tikal. Within a year of this event, a new ruler is established on the throne of Tikal – *Nun Yax Ayin*, the son of ‘Spear-Thrower Owl’ who

is likely the king of one of the Mexican centres, possibly connected to Teotihuacan, and who needed to seek new resources outside their local territories (Stuart 2000; Graham personal communication). *Siyah K'ak'*, who had the status of high lord *Kaloomte'*, oversaw the accession of the new king of Tikal, who introduces Teotihuacan symbolism and style into Maya imagery of the time, seen on Tikal Stela 4 (Borowicz 2003, 222-226). While monuments of later rulers return to the Maya stylistic tradition (for example, Tikal Stela 31 commissioned by *Siyaj Chan K'awiil*, son of *Nun Yax Ayin*), the imagery often exhibits connections to the foreign tradition, possibly in recognition of ethnic affiliation, in the way the 'foreign' king (*Nun Yax Ayin*) and his attire are represented (Borowicz 2003, 226).

The arrival of Teotihuacanos was also recorded on Stela 1 from Bejucal on which *Siyah K'ak'* is recorded as the overlord of El Zotz's ruler of the *Pa' Chan* dynasty, and highlights El Zotz's close connection with Bejucal (Houston 2008a, 8). Thus, after the introduction of a new ruler at Tikal, various centres in the region, such as El Zotz, allied themselves with this great power and created a new network of political interaction. This ended the political instability in the region – the legacy of the end of the Preclassic period (Román et al. in press).

The rise of a rival state to Tikal, Calakmul, affected much of the Classic period politics of the Maya Lowlands, including El Zotz. The first known date from Calakmul was recorded on Calakmul Stela 114 with a Long Count date of AD 435. By that time, the Calakmul dynasty was already becoming a strong power in the region. During the 6th century it was spreading its influence and was involved in the affairs of polities to the south (Sharer and Traxler 2006, 358). During the reign of King 'Sky Witness', Calakmul forged an alliance with the site of Caracol and initiated a long history of conflict with Tikal, defeating it for the first time in AD 562. This started the hiatus

period in Tikal's history, which lasted over a century, until AD 692 (Martin and Grube 2000, 40; Houston and Inomata 2009, 109-110).

The two centres, Tikal and Calakmul, and their history of rivalry affected the local and regional political networks of the Classic period, as the dynasties of both centres sought to develop strong spheres of influence over the surrounding resource bases, trade routes and tribute networks. Both centres forged alliances with local royalties of smaller centres (Martin and Grube 2000, 20-21) and likely controlled in some way (directly or indirectly through tribute) the procurement of resources and their distribution along the trade networks. For the smaller states, in order to maintain the independent status of their royal dynasties, an alliance with one of these powers seemed to have been the only effective defence against political domination. Such was the politics of the *Pa' Chan* dynasty of El Zotz. The onset of the Late Classic period at El Zotz seems to be characterized by a shift in alliance, from Tikal to Calakmul, caused by the military rivalry between these two great states of the Southern Maya Lowlands.

3.4. The Late Classic Period

The Calakmul alliance network during the early Late Classic period (AD 550-700) included a vast number of sites, the strategic locations of which around the city of Tikal facilitated the diminution of Tikal's political control in the region and its ultimate defeat. Some of the best known of Calakmul's allies were Naranjo, Caracol, El Perú-Waka and Dos Pilas. There is also compelling evidence that El Zotz was one of the centres aligned with Calakmul during the early Late Classic period. For instance, a ceramic vessel dated to the Late Classic and naming a *Pa' Chan* ruler was found near El Perú-Waka (Houston et al. 2009b, 6; Carter et al. in press). A so-called 'Vase of the Initial Series' excavated from a tomb in Pyramid A-1 at Uaxactun in 1931 and dated to

Tepeu I (AD 550-700) was likely produced at El Zotz or in its vicinity, and represents an iconographic scene related to the themes of Calakmul's hegemony; it was probably gifted to the ruler of Uaxactun (Carter et al. in press). This suggests that Uaxactun as well as El Zotz were allied with Calakmul during the beginning of the Late Classic period. The alliance among the three centres then likely lasted throughout the 7th century (Smith and Morley 1932, 4, 14-17; Carter et al. in press).

Calakmul dominated Tikal and its allies for over a century, between AD 562 and 695. It reached its apogee as a regional power during the reign of *Yuknoom Ch'een II*, also known as 'Yuknoom the Great' who ruled Calakmul in AD 636-686 (Sharer and Traxler 2006, 381, 496). He successfully defeated Tikal on three occasions (AD 657, 677, 679), defeated Dos Pilas and became the overlord to its ruling king (AD 648), defeated Palenque (AD 654) and oversaw the accession of several rulers at the sites of Cancuen (AD 656, 677) and Moral Reforma (AD 662), (Sharer and Traxler 2006, 360).

During the El Zotz' alliance with Calakmul in the 7th and perhaps late 6th century, vessels portraying the so-called *wahyo' b* beings were produced at El Zotz or in its vicinity. These beings, often in frightening, zoomorphic forms, may have been perceived as evil omens, dangerous supernatural creatures, and representations of sinister aspects of the royal soul that could only be controlled by magic (Houston and Inomata 2009, 138, 208-209; Carter et al. in press). *Wahyo' b* could belong to gods, individual kings or royal dynasties and vessels portraying these creatures were important objects of the elite social circles in 7th and 8th centuries, especially at sites such as Altar de Sacrificios and in the Mirador Basin (Carter et al. in press). The characteristic red-background polychrome vases looted from the El Zotz region, now in private and museum collections, mark the first appearance of these *wahyo' b* beings on ceramic vessels (Houston 2008b, 4) and might have been used by the elites and royalty

of El Zotz to assert their position of power as ideological pioneers and sorcerers (Carter et al. in press).

Soon after the death of *Yuknoom* the Great, Tikal restored its dynastic power, renewed programs of construction and ultimately defeated Calakmul in AD 695 under the rule of the twenty-sixth king of Tikal, *Jasaw Chan K'awiil I* (Sharer and Traxler 2006, 390-393). His son, *Yik'in Chan K'awiil* led military campaigns against the Calakmul alliance and defeated both El Perú-Waka in AD 743 and Naranjo in AD 744. Thus, the beginnings of the 8th century in the Central Maya Lowlands saw the return of Tikal's power and yet another turn in the geopolitical landscape of the region. These events are also said to mark a different Late Classic phase in the Maya Lowland history and are often associated with a separate ceramic phase (for instance Tepeu II phase at Uaxactun, Smith and Gifford 1966, 171-172; Imix at Tikal, Culbert 1993; Caal phase at El Zotz, Walker 2009, 296; Czapiewska 2011, 395-398; Czapiewska 2012, 258-259).

The revival of construction works at El Zotz after a brief period of stagnation likely coincides with Tikal's plans to launch military campaigns against Calakmul's ally El Perú-Waka (Sharer and Traxler 2006, 400). Because of the location of El Perú-Waka (Figure 3.1), successful control over the Buenavista Valley would have been advantageous if not necessary for Tikal's campaign (Carter et al. in press). El Zotz again became entangled in the political machinations of the powerful centres of the region, probably allying itself back with Tikal during the later Late Classic period. The alliance might have also been facilitated by the revival of Early Classic symbolism related to Tikal's dynasty (with some Teotihuacan influences) initiated by *Jasaw Chan K'awiil I* as an attempt to revive the greatness of the Early Classic Tikal (Sharer and Traxler 2006, 391-393). Since the *Pa' Chan* dynastic lineage were allies or vassals of Tikal probably soon after the 'arrival' of Teotihuacanos, such powerful symbolic statements

referring to the past might have eased the realignment of the rulers of El Zotz. The connection between the two cities lasted until the onset of the Terminal Classic period and the decline of many of the Petén centres.

The one alliance for El Zotz which seems to have persevered through time and through the Tikal-Calakmul conflict is the one with the site of Uaxactun, evidenced mainly through the ceramic record. The theories as to why other alliances of El Zotz shifted over time portray the Buenavista Valley site as a mere powerless pawn in the political campaigns of the much more dominant centres (Carter et al. in press). However, the lack of evidence of aggressive action against El Zotz may also suggest quite a different picture of the role of El Zotz in the political dynamics of the region. The El Zotz royalty and elites might have been the opportunistic characters of the political scene as they successfully exploited the alliances with different political and economic powers (who sought to include the Buenavista Valley in their spheres of influence). As a result, the great allies of El Zotz likely supported the ruling elites and nobility and sponsored a number of construction projects on a monumental scale. These constructions at El Zotz were likely to have been possible only thanks to the economic, political and social support from the great economic powers of the region. When Tikal began to decline towards the end of the 8th century, the political power of the *Pa' Chan* royal dynasty did not last for very long.

3.5. The Terminal Classic Period

The changes that many of the major Maya sites in the Southern Lowlands underwent in the 9th century gave the name to the new period in Maya history called the Terminal Classic. The effects and aftermath of the Terminal Classic phenomenon were more profound in the interior heartland of the lowlands and at sites that enjoyed particular

prosperity during the Late Classic period, such as Tikal, Calakmul, Palenque, Copan, Dos Pilas or Naranjo, although the individual histories present a much more complex picture of this time period (Sharer and Traxler 2006, 500-505; Demarest et al. 2004). The changes which prompted the use of term 'terminal' included the dissolution of the institution of divine kingship and all associated material culture, such as: cessation of monumental architecture and erection of dated monuments, disappearance of royal images and glyph inscriptions, cessation of elite artisanal and craft production, depopulation and eventual abandonment of sites (Sharer and Traxler 2006, 499-501). A decline was once thought to have affected the Maya area as a whole; however, it is now recognised that different regions, and even different sites within regions, responded to the changes of this time period in very different ways (Chase and Chase 2006, 169; Demarest et al. 2004). Some sites flourished (especially in the Puuc region in northern Yucatan, and in various regions across the Lowlands) while other centres sustained a largely unchanged but substantial occupation (for example Lamanai [Pendergast 1986, 226; Pendergast 1992; Pendergast 1981; Graham 2004], Yaxha [Žračka 2008, 197, 200-202], Trinidad de Nosotros [Moriarty 2013, 626-630] and many others), (Sharer and Traxler 2006, 533-535, Demarest et al. 2004, 557, 559-562).

Many theories were posited as to what were the causes of such a widespread phenomenon and most of them focus on the causal factors for the decline of Southern Lowland powers. The theories include drought and famine, overpopulation, endemic warfare as well as internal social problems stemming from the Late Classic period (Chase and Chase 2004b, 15; Sharer and Traxler 2006, 505-517). Due to the variability of responses to the Terminal Classic phenomenon, recent academic research emphasises the case-by-case approach in order to identify more localised trends of Classic to Postclassic transition at a number of sites to pinpoint the relevant cultural shifts that

define the Terminal Classic transformations (Demarest et al 2004,545-550; Newman et al. in press).

In the region of Central Maya Lowlands, the most powerful sites of the Late Classic period visibly declined during the Terminal Classic. The process, however, was most likely a slow and gradual one, starting towards the end of the Late Classic period in the 8th century, rather than a sudden collapse and abandonment. For instance, the kings of Calakmul never revived their power and prestige in the region after their defeat by Tikal in AD 695. Several *Kan* dynasty rulers erected monuments, and were even mentioned in texts at allied states of Dos Pilas and El Perú-Waka. However, there is little mention of subordination of any kings to the Calakmul centre, as was the case during their supremacy period in the region. While various monuments were being erected by Calakmul kings, the names of many of them are still unknown. Stelae 16 and 61 from Calakmul record the last Period Ending as a Long Count date 9.19.0.0.0 (AD 810) (Braswell et al. 2004, 180). The last dated monument, Stela 61, contains an abbreviated date which probably reads as the commemoration of the k'atun ending in AD 909 (Sharer and Traxler 2006, 415; Braswell et al. 2004, 180). Even though it contains the name of the last known ruler of Calakmul, *Aj Tok'* (Martin and Grube 2000, 115), it was a small-sized stone and did not compare to the grand monuments of the Late Classic period. Therefore, even though the rulers of Calakmul still erected monuments at the site despite significant demographic decline visible in the archaeological evidence (Braswell et al. 2004), the poorer quality of the artisanship and textual erudition indicate a gradual weakening of the socio-political status of Calakmul kings or possibly a series of other crucial social and cultural transformations. Whilst the epicentre of the city contained a significant occupation well into the Terminal Classic period, and the rulers seemed to have maintained the institution of divine kingship, the rural areas were

abandoned at the beginning of this period, and lost an estimated 90% of the population during the 9th century (Braswell et al. 2004, 188).

At Caracol, while monuments were still being erected by rulers in the wake of a construction revival starting AD 798, there is evidence that the power of the kings was gradually being dispersed among other noble lineages at the site. Terminal Classic monuments bear images of the last known rulers of Caracol sharing the political stage with nobility. They also show scenes with representations of captive figures alone or themes of alliance, which all depart from the earlier monumental art traditions.

Examples with these characteristics are Stela 17 (AD 849) and Altars 10, 12, 13, 22, 23 (Sharer and Traxler 2006, 415-416; Chase and Chase 2004a, 345; Chase, Grube and Chase 1991, 7-12). However, Arlen Chase and Diane Chase (2004a, 342) report that the cache and burial deposits from the 9th century were found to reflect the deep-rooted Late Classic traditions and the isotopic analysis of selected human remains from the epicentral tombs show a continuation of elite diet and widespread elite presence. Thus, while the elite occupation at Caracol continued until the end of the Terminal Classic period, the institution of divine kingship and the power of a single person or lineage is thought to have gradually dissolved much earlier.

Caracol's elite success during the Terminal Classic can be attributed to the strengthened ties with the flourishing Yucatan region. There are strong visible signs of Yucatec heritage at Caracol, as represented in the texts and iconography at the site (Chase, Grube and Chase 1991, 14). The elite status and wealth at Caracol is estimated to have lasted until about AD 895, although no monuments were erected after AD 859. The abandonment of core structures was most likely sudden and relatively rapid (Chase and Chase 2004a, 343, 363-365).

The Terminal Classic at Tikal is signalled by the much more modest construction endeavours of kings succeeding *Yik'in Chan K'awiil* and *Yax Nuun Ayiin II* at the end of the 8th century. The construction of Temple III at the beginning of the 9th century indicates that the ruler had the authority to command a large labour force: however, Temple III was the last significant project seen at the site (Valdés and Fahsen 2004, 150). The lack of substantial construction was also a likely result of the depopulation of areas in the centre and in the peripheries of the city. Archaeological investigations based on ceramic chronology showed that there was a dramatic abandonment of residential groups by ca. AD 850 with only about 19-24% of the ceramic sample showing traces of the Eznab phase Terminal Classic occupation (Haviland 2003, 126). Some studies postulate that the Tikal population decreased during the Terminal Classic by as much as 90% and continued to fall into the Early Postclassic period (Valdés and Fahsen 2004, 158).

During this time, the monuments of the last rulers of Tikal are few in number, presenting only a sketch of the city's dynastic succession. The last monument erected at Tikal (Stela 11) by the last known king, *Jasaw Chan K'awiil II*, dates to AD 869 (Sharer and Traxler 2006, 419). There are at least two later monuments erected in the Tikal region, Jimbal Stela 1 and Uaxactun Stela 12, which record the date of AD 889 (Martin 2003, 34; Martin and Grube 2000, 53; Sharer and Traxler 2006, 421). Uaxactun Stela 12 mentions the last known Tikal ruler, meaning he remained in power at the site until at least AD 889 (Valdés and Fahsen 2004, 150). By that time, however, Tikal's control over the region was probably non-existent and allowed for a series of smaller states to take advantage of the newly-emergent power vacuum. For example, numerous rulers, such as those from El Zotz, Uaxactun, Zacpeten or Caracol, commemorated the end of the 10th *bak'tun* (Houston and Inomata 2009, 302-304; Martin and Grube 2000,

53, 99), emphasising the authority of the newly emerging dynastic powers in the wake of Tikal's political crisis. Moreover, the first and only epigraphic evidence that a *k'uhul ajaw* resided at the site of Nakum comes from Stela C (AD 815) commemorating a scattering event and listing the Nakum emblem glyph (Żrałka 2008, 202-203; Grube and Martin 2004, 81; Grube 2000, 253). It is estimated that during this time period almost all palace and residence groups in the centre of Nakum were occupied along with about 78-86% of the peripheral complexes (Żrałka 2008, 204). Thus, the centre of Nakum, once a subordinate of Tikal and Naranjo, experienced a short period of revival and prosperity during the decline of the great centres (Żrałka 2008, 202-210).

At Tikal, the migration of population from the abandoned rural areas into the administrative centre is said to account for the poor quality of Terminal Classic renovations and remodelling introduced into the grand Classic edifices (Valdés and Fahsen 2004, 151). A similar situation was occurring in smaller secondary centres around Tikal, such as Bobal, Chikin Tikal, Jimbal, Uolantan, Navajuelal (Valdés and Fahsen 2004, 151). Alternatively, the decreasing quality of construction projects can signal that the elites lacked power to command labour and resources.

3.6. The Postclassic Period

During the Postclassic period, much of the urban activity was centred in northern Yucatan and in areas of Belize and Gulf Coast, while the territory of the Southern Lowlands was comparatively depopulated and most urban cores of the Classic centres stood abandoned. Nonetheless, there were settlements located on rivers and lakes and near major trade routes which maintained their occupation even after the dissolution of the Southern Lowland political powers (Sharer and Traxler 2006, 613). For instance, the site of Lamanai, thanks to its strategic location, continued its activity through the

Terminal Classic and well into the Postclassic and even Colonial periods (Graham 2004; Pendergast 1981, 42-53; Pendergast 1992, 73-79; Graham 2000). Similarly, in the Central Maya Lowlands, most of the settlements of political significance focused around the Petén lakes region, such as the Kan Ek' polity with its capital in Tayasal, the polity of Yalain or city of Topoxte (Sharer and Traxler 2006, 616-617).

After the dissolution of the Classic political system much of the large monuments of the Classic period cities fell into decay. There is evidence, however, that the cities were occupied by smaller-scale household groups, which either constructed new settlements nearby the ruins of the great giants, or re-purposed some of the old structures. The presence of these groups (sometimes labelled 'squatters') was recorded for sites such as Tikal, Dos Pilas, Copan, Palenque, Piedras Negras (Martin and Grube 2000, 53,66-67, 175; Manahan 2008, 172-173; Stuart and Stuart 2008, 238-239; Child and Golden 2008, 84).

El Zotz also maintained a small population in a household compound located in the South Group complex, meaning the remaining Postclassic population of the Buenavista Valley reoccupied an area of the earliest settlement at the site – the Middle Preclassic platform. There is much consistency between the domestic objects these Postclassic people used and the artefacts dated to the Late and Terminal Classic periods. In fact, much of the domestic utilitarian ceramic types show considerable rates of continuity from the Late Classic, through the Terminal Classic and into the Early Postclassic (also in Chase and Chase 2006, 172). Therefore, the Terminal Classic and Postclassic periods are not only characterized by radical socio-political changes but also by cultural continuities within communities. These continuities, observed in El Zotz material culture, occur largely on a domestic level (Kingsley and Gámez in press), which proves

that domestic production was not dependent on elite presence nor was it politically controlled (Howie 2012, 35-36).

The Postclassic population of El Zotz can be securely dated only to the Early Postclassic period (AD 950-1250) and came to a halt at the beginning of the Late Postclassic period, at the end of the 13th century. Only one later radiocarbon date (AD 1426-1524, Laboratory number: Beta-250882, Table B.1) has been obtained for El Zotz and originates from two Lacandon-style vessels deposited by visiting Lacandon Maya on top of Temple L7-11. Such vessels, called ‘god-pots’ were also found at numerous other grand Classic period sites, such as Piedras Negras, Yaxchilan, or Palenque (Child and Golden 2008, 87). The Lacandon Maya emerged in the Southern Lowlands from the interaction of indigenous peoples inhabiting the dense forests during the Colonial period as they fled the upheaval of the Spanish conquest (Palka, 2005, 73). In some areas of the forest they lived in villages and small-scale settlements until the re-discovery and new wave of contact in the 19th century (Palka 2005, 8-9).

3.7. History of archaeological investigations at El Zotz

The first explorations of the site of El Zotz occurred in 1977, under Marco Antonio Bailey who created the first map of the ruins and registered the site with the Guatemalan government (Houston 2008a, 6; Laporte 2006, 950). In 1978, George Andrews visited the site and documented the site’s emblematic hilltop group, giving it its current name – El Diablo. His findings, however, were not published until 1986 in *Mexicon* (Laporte 2006, 949). About the same time, in the seventies, Ian Graham created the most detailed plan of El Zotz to date, with a record of all looters’ tunnels and the details of the texts on stelae, which can still be found at the site today (Houston 2008a, 6). Thanks to Graham’s efforts, a carved lintel of chicozapote wood, proved to have been stolen from

structure M7-1 at El Zotz, was repatriated from the Denver Art Museum by the National Museum in Guatemala City. The publications and increased interest in the site unfortunately prompted a period of intensive looting of El Zotz in the seventies and eighties. As a result, a large number of looted vessels which can be traced to El Zotz is now in collections of private owners and museums.

From the eighties until 2000, a number of visits was carried out by members of the Proyecto Nacional Tikal, especially by Juan Pedro Laporte and Juan Antonio Valdés, and the Departamento de Monumentos Prehispanicos (DEMOPRE) of the Guatemalan Institute of Anthropology and History (IDAEH), (Laporte 2006, 951). All these efforts were aimed at various programmes of mapping, rescue, preliminary test-pit investigations and investigations of looters' trenches. Explorations by Proyecto Nacional Tikal into one of the looters' tunnels of Structure L7-11 yielded a rich cache of four Late Classic lidded cylindrical vases (of Tinaja Red type) and a number of associated artefacts (bones, shells, bone and shell ornaments, flint and obsidian artefacts, and eccentric flint and obsidian objects), (Laporte 2006, 962-966). This find prompted an increase in scholarly interest in the site, but until 2006, the investigations remained secondary to works at nearby Tikal.

The findings of Proyecto Nacional Tikal were not published until 2006 by Juan Pedro Laporte. This was done in preparation for the inauguration of the El Zotz Archaeological Project, directed by Stephen Houston of Brown University, Rhode Island. Thomas Garrison, University of Southern California, and Edwin Román, University of Texas, co-directed the El Zotz Project Phase One and continue the extensive investigations at the site in Phase Two. The first phase of the El Zotz Archaeological Project was conducted in the years 2006-2011 with the first two years focusing on mapping and exploratory investigations. The remaining four years consisted

of excavation and conservation works in various sectors of the site as well as at the neighbouring sites in the Buenavista valley, namely El Palmar, Bejucal and La Avispa. The El Zotz complexes under extensive investigation by members of the El Zotz Archaeological Project included the South Group (Gámez 2009; Kingsley and Cambranes 2011; Kingsley and Rivas 2012), El Diablo (Gillot Vassaux 2008b; Román and Carter 2009; Román and Newman 2011; Beltrán and Román 2012), the Acropolis area (Arredondo Leíva et al. 2008; Meléndez 2008; Matute Rodriguez 2009; Pérez Robles et al. 2009; Marroquín et al. 2011; Newman and Menéndez 2012), Las Palmitas (Gillot Vassaux 2008a; Quiroa Flores 2009; Carter and Gutiérrez 2011; Carter and Gutiérrez 2012), La Tortuga (Belches and Garrido 2012), the Plaza of the Five Temples and neighbouring areas (Nelson and Doyle 2008; Cambranes 2009; Aragón 2011; Cambranes 2011). Investigations at El Palmar were conducted by James Doyle and Rony Piedrasanta (Matute and Doyle 2008; Doyle and Matute Rodriguez 2009; Doyle and Piedrasanta 2011; Doyle and Piedrasanta 2012), and at Bejucal by Thomas Garrison (Garrison and Garrido 2009a; Garrison and Beltrán 2011; Garrison and del Cid 2012). The mapping initiative for the Buenavista valley, under the direction of Thomas Garrison, continued throughout the years of the project's successful research. Mapping teams explored the settlements of the El Zotz itself as well as large territories of the valley floor between El Palmar and El Zotz (Nelson 2009; Garrison and Garrido 2009b; Knodell and Garrison 2011; Garrison et al. 2011; Garrison and Kwoka 2012). Thanks to these far-reaching surveys, new structures and even an entire elite complex (El Tejón) were discovered, mapped and excavated (Knodell and Garrison 2011; Piedrasanta 2012).

The project also involved an extensive research and analysis of a variety of excavated materials: ceramics (by Caitlin Walker, Ewa Czapiewska-Halliday, James Doyle,

Melanie Kingsley, and Ronald Bishop from the Smithsonian Institute, Washington D. C., Walker 2008; Walker 2009; Czapiewska 2011; Czapiewska 2012), lithics (by Zachary Hruby, Hruby 2008; Hruby and Lang 2009), faunal remains (by Sarah Newman, Newman 2013), paleoecological remains (by Timothy Beach and Sheryl Luzzadder-Beach, Beach and Luzzadder-Beach 2009; Beach et al. 2011), and osteological remains (by Andrew Scherer, Scherer 2009; Scherer and Garrett 2011; Scherer 2012). The results of these investigations all contributed greatly to my current research and allowed for the comprehensive historical and cultural contextualisation of the research problems.

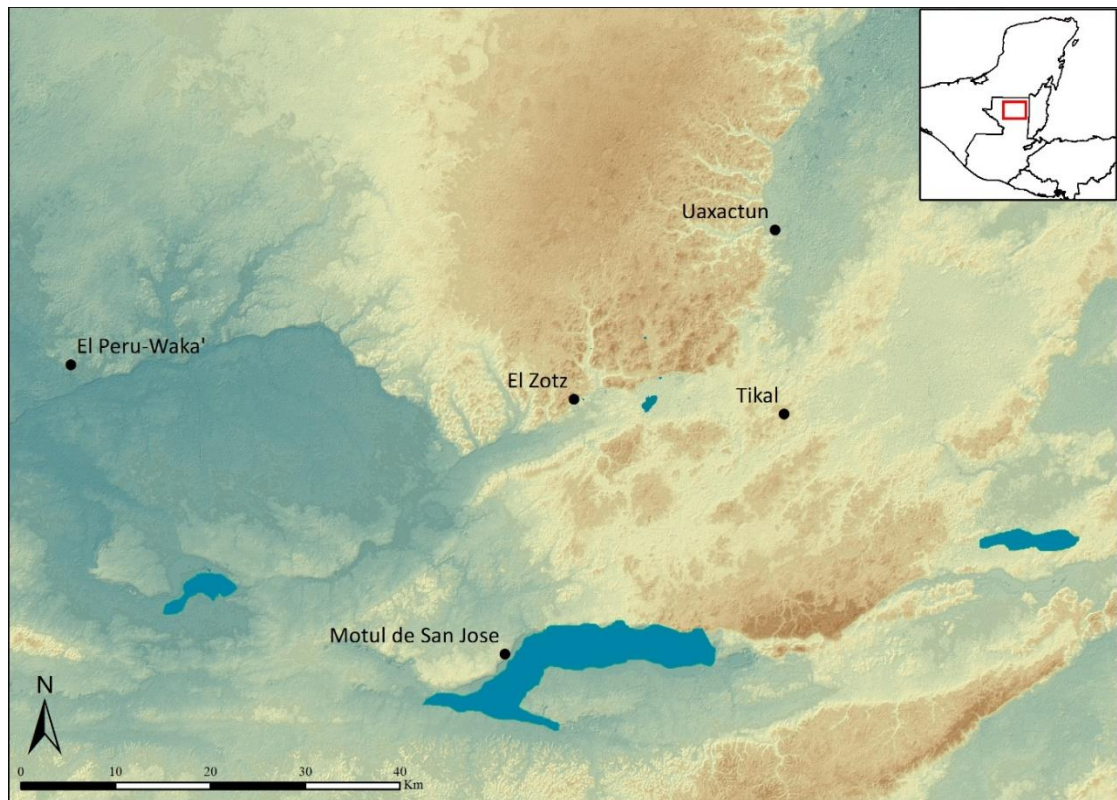


Figure 3.1 El Zotz location in the central Petén region. (Map by O. Alcover Firpi)

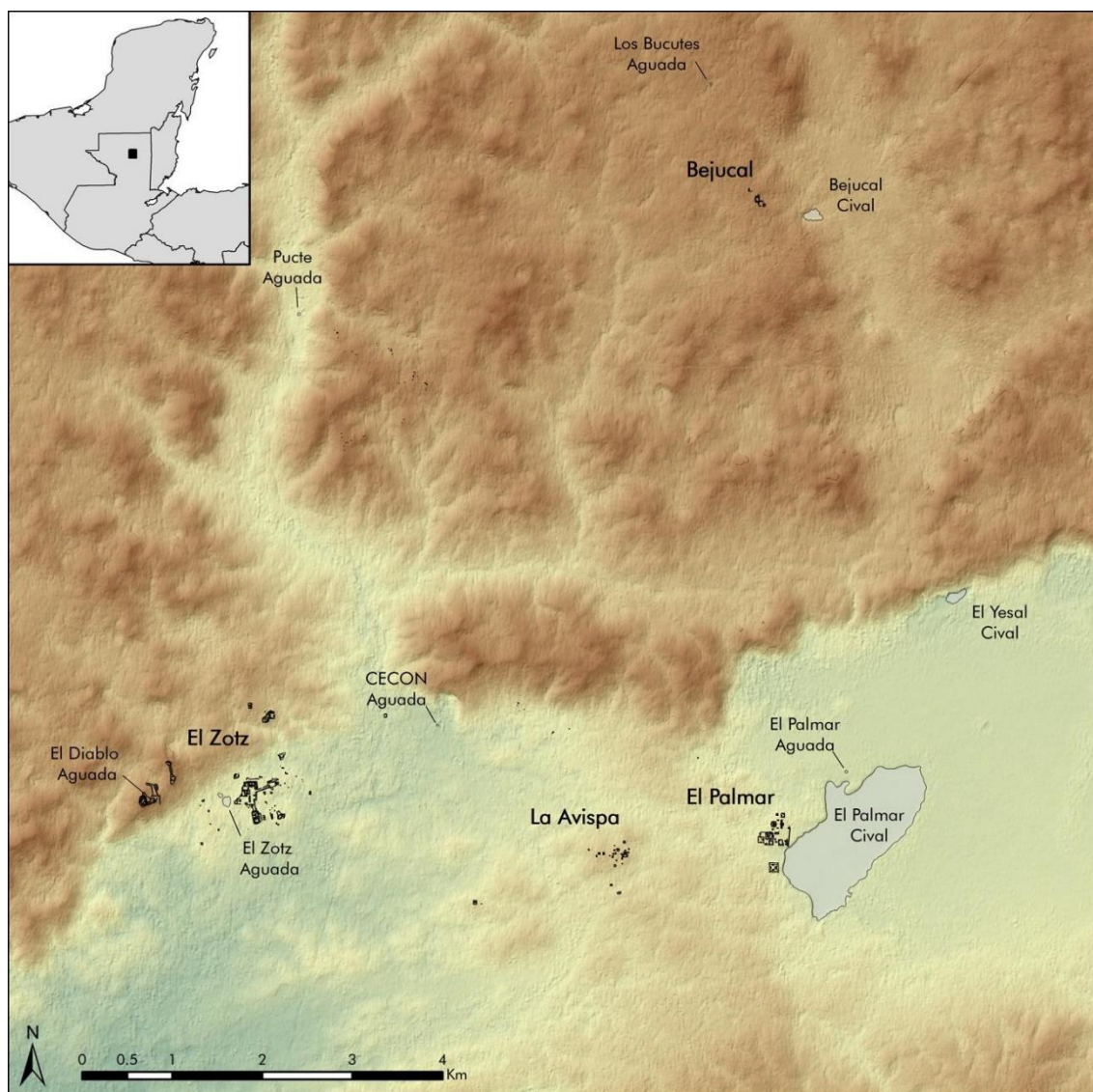


Figure 3.2 El Zotz location in the Buenavista Valley. (Map by T. Garrison)

CHAPTER 4. Theory Behind the Method and the Sample

The built environment of the ancient Maya encompasses a variety of architectural forms, yet the patterns of spatial distribution of structures are similar across different Maya sites. The pattern where structures are built around courtyards or plazas (enclosed exterior spaces) is reproduced across time (from the Preclassic to the Postclassic) and across regions (Demarest 2004; Ashmore 1989, 279; Christie 2003; Houston and Inomata 2009; Inomata 2006; Doyle 2013; among others). ‘Structure groups’ are emulated regardless of construction size. The pattern of structures built to encircle internal courtyards characterises elite buildings as well as more modest ‘commoner’ houses (Demarest 2004, 99; Webster 2002, 438; Guderjan et al. 2003; Houston and Inomata 2009; among others).

Since such structure groups are not specific to a time period, region or social class, they must stem from a deeply-embedded cultural norm. The importance of kinship, lineage, community-based economy and ancestry among the Maya, and many other cultures, seems to encourage the construction of ‘household’ groups, though households do not necessarily equal family or lineage (Houston and Inomata 2009, 49; McAnany 2010, 129-137; McAnany 1993, 72; Johnston and Gonlin 1998, 156-157). These household groups, much like royal and noble courts discussed previously, are places where families and other household members carry out their daily activities for the good of the household as a whole. The household members often have historical or social ties to the buildings they inhabit which are part of the architectural group. Therefore, the social and economic success of a household – a primary unit of production in Maya societies – depends on effective co-operation of the kin-based community inhabiting the architectural complexes (Houston and Inomata 2009, 49).

The El Zotz complexes under investigation all contain structure groups which enclose courtyards and plazas (Figure 6.1 – Figure 6.7). The El Tejón complex, as one exception, contains buildings bordering a distinctive exterior platform plaza only on one side (Figure 6.6). The larger architectural complexes have more than one structurally-enclosed plaza; often, one building may serve as a border for two neighbouring plazas which is probably a result of architectural expansion due to increasing population within the group. The groupings of buildings within the studied complexes suggest they were occupied by household-based communities. Thus, the architectural complexes investigated in this research are presumed to reflect the social groups, or social household constructs, within the El Zotz population. As a result, the material remains recovered from archaeological contexts from the architectural complexes are presumed to reflect the possessions of the studied social groups.

Due to the nature of excavated contexts, which in their majority are secondary contexts of construction cores, it cannot be stated with any certainty that the recovered material was used and deposited solely by the people occupying the discussed complexes. A similar issue has been described for the site of Tikal (Haviland 2003, 116-117).

According to Haviland (2003) smaller-scale core material used in construction was more likely to originate in the vicinity of the final deposit, whereas material from core of larger-scale construction was more likely to have been transported over some distance. However, the distance between architectural groups or complexes at El Zotz makes it less likely that the material found in one complex was deposited by a population group inhabiting another. Thus, even though the deposited material could have originated from outside the architectural boundaries of the mapped structures, the five collections – from the Acropolis, El Diablo, Las Palmitas, El Tejón, and Group K –

are considered distinct on the grounds that each collection is associated with one of the spatially bounded groups.

The relations among the five population groups should be considered on several levels of analysis. For the purpose of my research, three levels of patterning are being considered: chronological sequence, spatial and structural configuration, and consumption behaviour. Consumption behaviour, derived from the study of consumption patterns of ceramic goods, is emphasised. Other levels of analysis supplement, clarify, and order any results derived from consumption behaviour analysis. It is expected that the combination of the study of these three levels of patterning will generate reliable results, which can be further used for inter-site comparative investigations.

4.1. Chronological sequence

The study of **chronology** is of crucial importance as it examines the contemporaneity and longevity of the occupation of complexes in question. Establishing the history of buildings' occupation enables for appropriate comparative study of contemporaneous material assemblages.

Current research employs time periods and chronological phases developed in the Maya area over decades. These periods were established through associations of material remains with contexts related to dated stelae at sites which have historically received a lot of archaeological attention, such as Uaxactun (Smith et al. 1960, 331). The major time periods in pre-Columbian Maya history are called: Preclassic, Classic and Postclassic. They are additionally divided into Early, Middle and Late episodes, and in some instances, each of these is further sub-divided into early and late phases (for instance Culbert 1993, Smith and Gifford 1966, Hermes 2012, Foias 1996, Pendergast

1979, among others; Table 4.1). Thus, through constant research conducted at numerous Maya sites it is increasingly possible to date artefacts to chronological phases of 100-year slots or less, instead of broad 500-year intervals.

As indicated by the names of the time periods, they remain Classic-centric and emphasise the period of the prosperity of the large Central Maya Lowland sites, such as Tikal and Calakmul. Periods before the Classic were originally regarded as a prelude (Preclassic) to the Classic apogee, and the time after the Classic, the Postclassic, as a period of decline of the ‘great Maya civilization’ (e.g., Pendergast 1986, 223). It is now recognized that these designations do not accurately reflect the history of transformations of Maya states and numerous discussions and publications have since emerged challenging the Classic-centric view of Maya civilization (Inomata et al. 2013; Doyle 2013; Estrada-Belli 2011; Hansen 2001; Reese-Taylor and Walker 2002; among others).

4.1.1. Main features of the time periods

The named time periods were first identified based on several characteristics originally applied to the Central Lowland Maya sites, although not all regions of the Maya area experienced the same types of changes and social phenomena as suggested by the proposed chronological markers. However, since the time periods were first designed for the region where El Zotz is located, they are likely to reflect the developments affecting the studied polity. The characteristics of the time periods in the Central Maya Lowlands can be summarised as follows:

1. Evidence of kingship and elites: Preclassic and Classic periods

This is a very broad criterion and includes monumental architecture, investments in public buildings, evidence for social stratification seen in differences of

architectural complexity of residences and in different treatment of individuals in death. Originally it was thought the appearance of kings and royal lineages in the Maya area occurred at the onset of the Classic period. Now, however, there is sufficient evidence to suggest that Maya kings ruled their cities during the Late, and most probably even the Middle, Preclassic period. Nonetheless, there is a marked decrease in the scale of occupation and construction projects carried out from around AD 900/950 in the Central Maya Lowlands, suggesting significant transformations to the Classic political systems of the region. Therefore, the successive time period, labelled Postclassic, represents a considerably different political order with very little or no evidence of rulership of the same magnitude and kind as in the preceding periods.

2. **Glyphic texts with legible dates:** Classic period

The erection of monuments and creation of portable objects inscribed with glyphic records are considered hallmarks of Classic period Maya civilization. Most texts were found in the Southern Lowland sites. Often, the beginning and the end of the Classic period are correlated with the earliest and the latest recovered Long Count dates. It has been agreed to use the date on Tikal Stela 29 (AD 292) as the beginning, and the dates on Jimbal Stela 1 and Uaxactun Stela 12 (AD 889) as the end of the Classic period (Martin and Grube 2000, 51).

3. **Divine kingship and increased hierarchy of titles:** Late Classic period

The increased number of inscriptions appearing throughout the Classic period in the Southern Maya Lowlands coincides with increased hierarchy of titles recorded in the texts. The institution of divine kingship (*k'uhul ajaw*), although most likely developed much earlier, is officially recorded from the middle of the Classic period.

These socio-political developments reflected in textual records allow us to further characterise the Late Classic period as distinct from other chronological periods.

4. **Pottery types and styles:** markers for each individual time period

Ceramic typology has long been used as a chronological indicator because some of the characteristic changes outlined above correspond to clear transformations in ceramic types, styles, methods of manufacture and decoration. Consequently, for example, Classic period pottery is characterised by the appearance of polychrome decoration. Painted polychrome vessels are missing from Preclassic contexts and are near-absent in the Postclassic assemblages. The Preclassic period slips have a waxy quality to them and are distinctly different from the Classic glossy slips. The Terminal Classic period saw the spread of fine paste ceramics. The Postclassic period is marked by quite drastic changes in ceramic styles at many Maya sites, for example, the widespread use of incised rather than painted polychrome decoration. These are only some of the features used by ceramicists to establish chronologies of occupation of structures. There are numerous attributes of ceramics which, when studied on local levels, can provide relatively narrow timeframes for occupation within the broader chronologies.

4.1.2. Method of identifying chronological patterns at El Zotz

The chronology of occupation of El Zotz complexes is based on several lines of evidence and provides the background for the comparative analysis presented in this research.

1. Ceramic dating

Identifying period-specific characteristics of the recovered ceramics serves as the main source of chronological information of individual stratigraphic contexts at El Zotz, and at many other Maya sites. The regional consistency in ceramic styles

allows for successful identification of regional and local chronological phases of occupation in various Maya regions (Table 4.1, Czapiewska-Halliday et al. in press). In the region of Petén, where El Zotz is located, many of the ceramic types and associated contexts were dated with the aid of inscriptions which help set the stratigraphic levels in the specified Maya time periods and within specific phases of these periods (Smith et al. 1960, 331). Because Petén regional ceramic markers are present at El Zotz, the studied contexts can be dated through ceramic cross-comparisons coupled with absolute and relative dating methods, even in the absence of an extensive hieroglyphic record. After extensive analytical work the chronology of occupation of El Zotz can be now related to those of neighbouring sites and even across regions.

Table 4.1 Ceramic phases at Tikal, Uaxactun and El Zotz.

Approximate dates	Period	Tikal	Uaxactun	El Zotz (provisional)
800 – 600 BC	Middle Preclassic	Eb		Unnamed Eb-like complex
600 – 350 BC		Tzec	Mamom	Che
350 – 0 BC	Late Preclassic	Chuen		
0 BC – AD 150		Cauac	Chicanel (~200 B.C.)	Chub
AD 150 – 250	Protoclassic	Cimi		Pop
AD 250 – 550	Early Classic	Manik I	Tzakol I	Saquij I
		Manik II	Tzakol II	
		Manik III	Tzakol III	Saquij II
AD 550 – 700	Late Classic	Ik	Tepeu I	Mo’
AD 700 – 850		Imix	Tepeu II	Caal
AD 850 – 980	Terminal Classic	Eznab	Tepeu III	Cucul
AD 980 – 1250	Early Postclassic	Caban		Choc
For Tikal periodization, see Culbert (1993); for Uaxactun, see Smith and Gifford (1966); for El Zotz, see Walker (2009) and Czapiewska (2012).				

2. Absolute dating

Several carbon samples have been collected from contexts from across El Zotz, Bejucal and El Palmar between 2009 and 2011 field seasons by the El Zotz Archaeological Project. Sixty of these have been dated by the Beta Analytic laboratories which provided detailed reports. The extent of the excavated areas and

the relative nature of other forms of dating made it more pressing to use carbon dating during the archaeological analysis. The dated samples, however, were focused on the largest structures at the site as they provided most of the sealed and undisturbed contexts. Nine samples derive from the Acropolis, six from El Diablo, and one from Las Palmitas (Appendix B). The calibrated carbon dates are used to refine and support other forms of dating of the excavated contexts analysed in this research.

3. Architectural styles and dating of other material culture

A supplementary source of chronological information was derived from the architectural styles of buildings, from the stylistic dating of other material culture items, such as lithics (Hruby and Lang 2009), and from glyphic records of dates, albeit scarce compared to other sites from the Petén region, like Tikal and Uaxactun (Houston et al. 2009b, 6; Garrido López et al. 2012, 337). These methods were used to a lesser extent than the ceramic dating, largely because the amounts of ceramic material vastly outnumber any other types of objects and inscriptions. However, certain features of the architecture (such as the masks at El Diablo Solar Temple) or the glyphic texts also provide invaluable chronological information.

4. Stratigraphy of excavated contexts

The stratigraphic sequence plays a significant role in identifying occupation phases, especially in instances in which the dated pottery appears to have been mixed. The excavation reports and drawings published by the El Zotz Archaeological Project (Meléndez 2008; Arredondo Leiva et al. 2008; Gillot Vassaux 2008a; Gillot Vassaux 2008b; Pérez Robles et al. 2009; Quiroa Flores 2009; Román and Carter 2009; Marroquín et al. 2011; Carter and Gutiérrez 2011; Román and Newman 2011; Aragón 2011; Carter and Gutiérrez 2012; Beltrán and Román 2012; Newman

and Menéndez 2012; Piedrasanta 2012) permitted a successful identification of consecutive construction and occupation phases of particular structures. When this information was combined with ceramic, absolute and other dating techniques, each event phase could be placed within a specified time-frame. The dating of each event phase is the most crucial step in determining the correct chronological sequence of El Zotz occupation. The excavated contexts were put through a comprehensive stratigraphic analysis which clearly identified the contemporaneity of events as well as the historical progression of activities at the site.

All of the dating methods described above were used to place the 943 contexts excavated at five selected El Zotz complexes into site-specific chronological phases. The results of the chronological analysis provide a detailed picture of the occupation activity at El Zotz and allow for detailed comparison of the histories of the different architectural complexes.

4.2. Spatial and structural configuration

Determining **spatial arrangement** involves investigating the placement of the architectural complexes and the ways in which their location reflects natural, cultural and social criteria of choice, such as elevation, water sources, viewshed, or proximity to other architecture. The spatial patterns help illuminate the socio-economic dynamics of the different complexes because they reflect the physical conditions and the geographical arrangement in which the groups functioned. Spatial distribution of complexes also shows how far or how close the inhabitants were to other population groups and how populations accessed or controlled the flow of people and goods.

Structural configurations within complexes illustrate the architectural features of each area on an intra-complex level. My analysis looks at the sizes of complexes, the number

and types of structures, and the presence of special deposits, such as burials or caches. When identifying the structural patterns, I examine how many construction phases were detected for the excavated buildings, how the construction projects enlarged or added new features to the structures, and how the architectural spaces were transformed through time. The resulting configurations of structures reflect the confined physical environment in which people circulated. The study of architecture also examines to what extent the individual excavated archaeological contexts reflect various human activities.

The human living space was highly affected by the status and public roles of the inhabitants as is evidenced by the variety of excavated buildings across the Maya area and beyond. As mentioned in previous chapters, the location, size and complexity of structures were highly dependent on the socio-economic status and political authority of population groups and they are often seen as status-related characteristics (Guderjan et al. 2003; Kowalski 2003; Rowlands 1993; McAnany 2010; Johnston and Gonlin 1998; among others). The relationship between people's professions and their inhabited space is bidirectional, because the variables affect one another. The living spaces have high potential to influence the activities taking place within them, and identifying crucial variations between the different living environments aids in detecting the potential roles and statuses of inhabitants.

Two crucial characteristics of living space are emphasised in the current research: access and scale of architectural modifications.

1. Access

Limited or open access to spaces signals the need and ability, or lack thereof, to control the foot traffic in specific areas. It is a way of distinguishing who can

enter certain spaces and who cannot, which automatically enforces the socio-political status relations within populations. Limiting access to one's living space requires either a careful use of natural terrain or an input of resources into constructing a desired built environment (Johnston and Gonlin 1998; Houston 1998a; Miller 1998, 196-200; Fash 1998, 237; Foster 1989; Grahame 1997). The more limited access a group can create into their living or work spaces, the more resources they invest into limiting that access. The spaces in question do not involve simply the interiors of buildings, but also the enclosed courtyards and plazas. Access into all these spaces can be physical as well as visual and limiting each type of access requires different strategies of control.

2. Scale of architectural modifications

The amount of structural alterations and the scale of each construction phase within a complex depend on multiple variables: the resources available (economic, labour), the ability to manage different resources (natural and human), the changing size of the inhabiting population, the longevity of occupation, and the plans for future occupation. The different scales of construction works thus hint at the statuses of population groups as well as their changing spatial and structural needs through time.

Other structural features highlighted in the current analysis include the presence of tomb chambers, burials, cache and other ritual deposits. These special characteristics of edifices not only point to the amount of invested labour and resources, but also to the careers or trajectories of the buildings, their status and functions in the communities. The amount of construction episodes and ritual attention given to a building indicates its importance and the importance of people who have access to it. All these features help

extract the socio-economic information about the inhabitants of the structures which might be otherwise not recognisable from artefact assemblages.

Focusing on specific aspects of living spaces and their changes through time helps mitigate the limitations of the ceramic data analysis and helps to set the results in the geographical contexts of the site. Nonetheless, the available information is highly dependent on the excavation strategies as well as the preservation of architecture and the circumstances of abandonment. In some instances the buildings or particular phases of these buildings have unknown room arrangements; in other instances only delineations of stone platforms are visible with no other surviving features. To overcome these information constraints, the data gathered is used to highlight the common characteristics of complexes using some of the broader structural categories, in addition to outlining the unique details and features of each locale. I then employ comparative analysis to identify aspects of the built environment which are potentially characteristic of the economic, social or behavioural differences.

The spatial and structural information gathered for my research derives from the mapping, survey and excavation works completed by the El Zotz Archaeological Project team during 2008-2011 field seasons. The results presented are based on personal communication with project members, project reports, drawings, and maps, all of which help link stratigraphic contexts with the physical environment.

4.3. Consumption behaviour

The investigation into the presence of **consumption patterns** constitutes the main component of my analysis. Consumption behaviour is measured by the distribution of goods which were, or are presumed to have been, acquired, used, and discarded by the investigated population groups. Through the consumption of goods it can be determined

how each group was investing the available resources, how the amounts of these resources compared among the different social units, and whether patterns of consumption can be detected. Consumption of ceramic material forms the main focus of my study because of the versatility of pottery use, the wide distribution of pottery among different social strata, and the potential for differentiation when ceramics are used by different social and cultural groups.

The consumption patterns of goods are presumed to reflect the **economic wealth** (access to resources), **social status** (class, occupation) and **political authority** of the consumer groups. The kinds, quality and quantity of products which are acquired usually differs among social groups depending on these three variables. To determine the presence and nature of consumption patterns, accessibility to different classes of products needs to be considered in more detail.

Access to certain goods by different segments of society is determined to some extent by the kinds of distribution networks operating within that society. Different scholars divide the categories of distribution in different ways; in Chapter 2 I have discussed exchange and gift-giving. In some traditional ethnographic studies, distributional behaviour has been described in terms of three categories: reciprocity, redistribution and exchange (Rice 1987, 191). In the first two forms of distribution – reciprocity and redistribution – social rank and authority play a decisive role in determining who is granted access to goods distributed through these networks; access can include reciprocal gift-giving. During an exchange, especially a market exchange of commodities, individuals can gain access to a wide range of goods irrespective of social status, although access in this case depends on purchasing power (Hirth 1998, 456). Thus, in all distribution networks, access to certain products can be restricted through social status, kinship ties, or through economic wealth. All of these aspects are,

however, intertwined, as ‘most wealth was mobilised and moved through socio-political means’ in Prehispanic societies in Mesoamerica (Hirth 1998, 456). This makes economic capabilities a good reflection of an individual’s social rank and vice versa.

Therefore, the best indicator of economic wealth, social status and political authority of consumer groups is the value of goods these groups acquire. In theory, the higher the value of an object, the fewer the individuals who will have access to it. However, defining the value of an object is problematic in its own right, even when talking about goods in the modern capitalist market. In modern economic theory, one of the definitions states that value is an outcome of a consumer’s evaluative judgment (Sánchez-Fernández and Iniesta-Bonillo 2006, 41). Following the arguments on the nature of ‘value’ outlined in the previous chapter, it becomes clear that not only does the value of an object have to be viewed through its history of production, distribution and consumption, but the whole concept of value has to be viewed in economic as well as social, religious, ideological, and cultural terms (Tite 1999; McAnany 1993, McAnany 2010; Masson 2002; West 2002; Reents-Budet 1994; Inomata and Webb 2003, Graeber 2001, Flad and Hruby 2007; among others).

When dealing with archaeological remains, the idea of value of an object can only be inferred rather than established. Indeed, there are numerous limitations to the extent that archaeologists can assess the value of archaeological remains as held by the people in antiquity. Firstly, the value in question can only be presented as a relative, not an absolute, value which arises from a comparative assessment with other objects (for instance, Feinman et al. 1981, 872). Secondly, it is often impossible to recover a significant enough sample of complete objects of the same or similar kind for a reliable statistical analysis. It is often necessary to perform the analysis on fragmented and incomplete assemblages, which makes any uniform or concise assessment of cost or

value much limited. Finally, in many instances the relative values can only be inferred for larger collections rather than for individual objects; thus, the results and the resolution of these results are highly dependent on the sample sizes.

4.4. Ceramic classification for El Zotz assemblages

The ceramic assemblages excavated from the five selected complexes at El Zotz constitute the main database used in all of the analyses of the current work (Appendix C). The ceramic material was recovered in several levels of fragmentation: complete (reconstructable) vessels, semi-complete vessels and sherds. The state of fragmentation depended largely on the contexts of deposition, which ranged from primary to secondary. The effect of discrepancies in the quality of recovered ceramic material was mitigated by the use of appropriate methods of classification, and by analysis with suitable theoretical underpinnings.

The selected ceramic assemblages were classified according to two systems of categorization: type-variety and modal. Successful classification within each system required different characteristics to be preserved in the material remains; therefore, the two kinds of classifications were carried out and recorded separately. Each of these classifications was performed on distinct samples of artefacts and produced a specific range of data. The data collected through each classification system was then further analysed using qualitative and quantitative methods of analysis, which were supported by various statistical techniques (detailed in Chapter 7). Both the methods and the results of ceramic classification lie at the heart of my research; they are here considered in more detail to demonstrate their suitability for the posited research questions.

4.4.1. Types and modes

The analytical and theoretical concepts of ‘type’ and ‘mode’ were introduced into archaeology by Rouse in his publications in the 1930s and 1960s (Rouse 1939, Rouse 1960). In his works, he defines a ‘type’ as a category of object classification based on two or more attributes, or modes. A ‘mode’ is defined as any standard concept or custom within a community which becomes expressed in material culture in the form of attributes. Thus, a ‘mode’ can be one attribute or can be a cluster of attributes expressed in an artefact; the mode is significant in its own right. A ‘type’ is formed by a cluster of modes which are assumed to reflect specific cultural or behavioural traits (Smith et al. 1960, 331-332). A ‘variety’ is a subcategory of a type – a variation within the attributes constituting a type which is not deemed significant enough to form a separate type but can be distinguished into a discrete category.

A classification based on modes is referred to as analytical; classification based on types is called taxonomic (Rouse 1960, 313). Both of these systems of classification have strengths and weaknesses. The type-variety system has been widely criticised and its suitability for addressing social and cultural aspects of the ancient Maya was brought into question (Pendergast 1979; Aimers 2013, 229-230). However, as argued by Aimers (2013, 231), most of these criticisms have been argued for decades, yet the type-variety system remains to be widely used by Maya ceramicists, which means the type-variety classification must also carry significant benefits. Taxonomic classifications are especially suitable for inter-site and cross-regional comparisons, they foster communication between projects and are effective in ‘organizing chaos’ (Rice 2013, 26-27; Aimers 2013, 229; Aimers and Graham 2013, 92). The type-varieties are also frequently used to date artefacts. Type-variety is, in general, one of the most efficient ways to ‘describe and summarize a range of variation in a ceramic collection, and it can

be done rapidly with large samples at a low cost' (Aimers 2013, 231). Analytical classification, on the other hand, is better suited for recognising the finer, smaller-scale variations on intra-site and local levels, and for determining local chronological phases or for refining the general chronologies of sites.

4.4.2. Type-variety system

The type-variety system is widely used in the Maya area (e.g. Adams 1971; Gifford 1976; Holley 1983; Laporte 2007; Smith 1955; Smith et al. 1960; Willey et al. 1975; Moriarty 2012; Foias 1996; Forné 2006; Czapiewska 2012) and therefore is a well-established, developed and detailed technique of artefact categorization. In the type-variety system, ceramics are assigned to a specified ceramic *group*, *type* and *variety*.

In the Maya area, each ceramic 'type' and 'variety' is identified on the basis of particular traits or features including, but not limited to, slip colour, decorative techniques, ornamentation and paste composition. The principle is that the distribution of these features represents choices made on the part of those who acquired the pottery and thus represent categories or groups of features recognised in the past by the Maya (obviously choices were made by the producers as well, but approaches other than type-variety classification are more suitable in the analysis of production). Types and varieties are then combined to form groups based on the similarity of surface treatment and colour. Groups are then assembled into *complexes* on the basis of their context and stratigraphy. The *complex* is believed to be representative of a specific period of time (Smith et al. 1960, 330) in a specific geographical region. Ceramic types established for the site of Uaxactun (Smith 1955) were used to characterise the chronological ceramic complexes for the region of Petén in which El Zotz is located. Patterns of affiliation and similarities between ceramic complexes of archaeological sites are sometimes studied under the umbrella of ceramic horizons, spheres or systems (Bill 2013, 31-35). The

types here applied to the ceramic assemblages of El Zotz to construct its local chronology of occupation are those identified for the central Petén ceramic sphere encompassing sites, such as Uaxactun and Tikal (Walker 2009; Czapiewska 2011; Czapiewska 2012). Ceramic groups are additionally assembled into wares (classes) on the basis of their paste composition and basic surface treatment.

4.4.3. Modal system

The type-variety system, while extremely useful for indicating chronologies of contexts and some basic social or trade/exchange information, cannot supply all the data necessary to answer all of my research questions. Thus, a particular set of pottery modes were chosen by me and recorded to enrich the dataset. The modes investigated in this research are the modes of decoration.

Modes of decoration

Surface treatment of a vessel must have been of importance for the ancient Maya; they recorded surface treatment methods in glyphic texts along with the vessel form, owner of the vessel, the artist's name, contents and sometimes also other information. There are two known words expressed in Mayan inscriptions which specify the method of decorating the vessel. The first one means 'painting / writing' and is found in the majority of vessel inscriptions containing decorative information, unsurprisingly as most texts on pottery were painted in polychromy (Helmke 2009, 611). The other surface treatment designator means 'carve / scrape' (Helmke 2009, 613). Based on the sole existence of these two categories of surface decoration in Maya glyph texts, it has been proposed that the ancient Maya only distinguished these two categories: the negative decoration (including carving, incising, moulding, gouging-incising), and positive decoration (including polychrome and bichrome painting), (Helmke 2009, 614).

The first analysed mode of decoration is thus the **technique of decoration**. It is an attribute often used in the taxonomic classification of Maya pottery, because it largely defines the surface appearance of the pot and is therefore thought to be a significant attribute of Maya ceramics in general. Creating complex and aesthetically attractive designs on the pots often required the use of a variety of tools and materials, the possession of technical knowledge and skills, and a clear idea for the final image. Working with different decorative techniques will also impact the content and the style of the design. For instance, it is possible to overlay different elements of a design when using a positive (colour) decorative technique but impossible to do so when applying a negative (non-colour) technique. A painted image also has the potential for conveying information through colour symbolism; this is not possible when using solely a negative technique of decoration. On the other hand, the negative designs are more durable and resistant to use-wear or fading, making them more likely to withstand the passage of time. As a result of these different constraints, there seem to exist distinct sets of rules of design composition depending on the selected technique of pottery decoration.

The analysis of the **content of ceramic ornamentation** constitutes the other element of the modal analysis of decoration. The complexity of the content of designs is frequently a subjective evaluation based on the impressions of the analyst. Therefore, it is essential to establish a set of identifiable and measurable units which can be used to assess the decoration on vessels in a uniform manner.

Most studies (e.g. Muller 1977; Washburn 1983) reduce the variety of motifs to simple elements, rules and transformations (Miller 1985, 94-95). One such study, formal analysis, investigates the structure of designs and the way in which the designs are produced from social and other elements. Some of the most commonly recorded components of decorations used in these analyses are elements, motifs, configurations,

basic units and layout (for definitions see Table 4.2, Rice 1987, 248-249). The variety of decorative elements and the rules with which the elements are brought together into designs is key for identifying the social and cultural aesthetic standards of a given society in a given period of time.

Table 4.2 Definitions of decorative modes.

Decorative attributes	Definition
Element	Smallest, self-contained component of a design that is manipulated or moved around a single unit; may be a single stroke of brush or a cut of incising tool or several such steps
Motif	Fixed combinations of elements that are used to form larger components of decoration; usually large or complex enough to fill major portions of the design space; may occur in groups
Configuration	The way the decorative motifs are arranged to fill the spatial division constituting a visual complex that is essentially recognised as 'design'; may be relatively complex involving various subdivisions of the design space
Basic unit	Conceptual category the artist uses to fill in the design space; in general, it is what the artist envisions as the primary constituents of the design or the most immediately recognizable components of a design; may be easily borrowed or imitated from artist to artist and may equate to motifs or configurations; a category in the mind of the artisan and so it is difficult to work with in prehistoric contexts
Layout/structure	Refers to where the decoration appears on the surface area, whether the area is subdivided and bounded (and if so, how), the symmetry and balance of the decoration, the amount of space covered, the placement and relation of different elements, motifs or configurations
Definitions after Rice, P. 1987	

Analysing the content of decoration is part of the current work based on the premise that decorative elements are not equal to one another but rather follow a grid from simple to complex and, thus, have the potential to reflect socio-economic differentiation of groups and individuals. For instance, Ball (1993, 259) proposed a distinction between a 'village-tradition' and 'palace-school' for painted polychrome vessels, in which the

‘palace school’ would be characterised by considerable iconographic and/or epigraphic erudition in comparison to the ‘village-tradition’. The vessels produced by artisans from the palace school are said to have been more likely to be found in high elite contexts, whereas the village school vessels are said to have had a much wider distribution. Thus, the skill of the artisan painting a vessel is directly associated with the economic value of a pot and also with the social status of its owner. It is, however, extremely difficult to identify the categories of decoration indicative of these two ‘schools’ because they are based purely on qualitative characteristics and leave a lot to the subjective judgement of the analyst. The formal analysis of the El Zotz decorated ceramics has the potential to provide the necessary data for a uniform content analysis of pottery decoration.

During the classification of the decorated ceramic sherds from Maya sites, the content of the decoration is almost never recorded. In cases of the most complex decorations, drawings and photos are usually provided but not necessarily for each of the decorated examples. As a result, potentially useful social and cultural information is lost within the classification process and likely never enters the archaeological analysis of artefact data. In the current research, the **elements**, the **motifs** and the **basic units** of decorations were recorded as part of the modal analysis.

The variety of elements and basic units can successfully characterise a population group but, from an archaeological perspective, such patterns cannot on their own signal social differentiation potentially existing within that group. Therefore, the number of different elements within motifs was recorded in order to explore the complexity of decoration and the possible correlation with the social status of population groups associated with different El Zotz complexes. This method allows for a controlled definition of “complex” and “simple” decorations based on their recorded data and a comparative analysis between assemblages. Complex designs will have greater numbers of different

kinds of elements and greater numbers of motifs or basic units within a single configuration, whereas simple designs will have fewer elements and would be less diverse in their possible motif structures.

4.4.4. Method of classification

The ceramic material was selected based on the context numbers recorded when the artefacts were originally brought from the excavations at El Zotz. The context numbers include the site code, operation number, sub-operation, unit and a lot (or context) number. Operation number indicates the architectural complex where the material was recovered; the sub-operation code indicates a structure or a feature within the complex; the unit number refers to a specific excavated unit at that structure or feature mapped onto the site plan. Lot number locates the material within the stratigraphic sequence of the excavated unit.

The bags of ceramic material selected for the current study come from 55 sub-operations (unique structures and features) across five complexes: the Acropolis area (Operations 2, 3, 12), El Diablo (operation 5), El Tejón (operation 17), Las Palmitas (operation 4), Group K (operation 10). The ceramic material was carefully examined, classified according to typological and modal systems, recorded and documented appropriately for each method of classification.

Type-variety classification

All the ceramic sherds excavated from the selected contexts were recorded in the custom-built database designed for the taxonomic classification. The categories within this database include: full location and context number, ceramic group, ceramic type, ceramic variety, vessel form, vessel part, special form or feature, count and weight.

In several instances, when a specimen was found to be from outside the list of known Petén types and varieties (Smith and Gifford 1966; Culbert 1993; Czapiewska 2012), a customised type-variety category was created in order to document as much information from a given sherd as possible. This also applied to all of the eroded sherds where the damaged surface made it impossible to assign them to a specific ceramic type. In these examples, the type category would reflect the main surface treatment or surface damage, such as ‘Eroded’, ‘Polychrome’, ‘Bichrome’, whilst the variety category would reflect any characteristics which may help with further data analysis, such as ‘Incised’, ‘Impressed’, or the visible colours of paints and the like. New local variations were created within the pre-established ceramic types in order to reflect any significant differences in attributes displayed in the local material. The most frequently recorded variety customised in this way is the ‘Orange’ variety within a Tinaja Red ceramic type (Figure A.70, Figure A.77, Figure A.78). This particular variety has all of the surface and form characteristics of a traditional Tinaja Red type vessel with the exception of slip colour, which is markedly more orange than the commonly found red hues of Tinaja Red pottery. It is also found predominantly in Terminal Classic contexts and can be used as a chronological marker differentiating the Late Classic from the Terminal Classic period at El Zotz.

After recording the ceramic types and varieties of each sherd, all of the material was subsequently assigned to a vessel form category and a vessel part category. Vessel forms and vessel parts were identified based on the guidelines published by Sabloff (1975, 22-27) and customised when necessary. The form categories listed in current research include the traditional Maya-specific type series categories, such as: plates, bowls, vases, tecomates, jars, drums, miniature vessels, and pedestals (for definitions see Table 4.3; Sabloff 1975, 23-24).

Table 4.3 Definitions of vessel form categories.

Vessel Form categories	Definition
Plate	Vessel with height less than 1/5 its diameter
Bowl	Vessel with height no more than equal but no less than 1/5 of its diameter
Vase	An unrestricted or restricted vessel with height greater than its diameter
Jar	A necked vessel, whose height is greater than its maximum diameter, with an independent restricted orifice; independent restricted orifice appears in vessels with an inflection point located above the equator of the body
Tecomate	Bowl with markedly incurved sides and interior thickened rim
Drum	Vessel with a base substituted for a second opening and rim, often with two points of inflection separating the middle or the body, does not have to be symmetrical and two orifice diameters can be different in size
Miniature vessels	Vessels much smaller in size but exhibiting all the characteristics of full sized forms
Pedestal	Vessel with a base substituted for a second opening and rim, often cylindrical shape and symmetrical outflared rims
Definitions based on those published in Sabloff 1975 and customised by the author	

The classification of form of ceramic vessels has been quite problematic for archaeologists and several approaches to categorising form and shape have been designed over the years. These include the traditional type series, which is the most common method and one used in this research (based on Sabloff 1975), as well as some of the less popular classifications, such as: measurement-based systems, geometric shapes, mathematical curves, among others (Orton and Hughes 2013, 191-202). Many of the less common approaches to classification of form require the measurement of angles and/or distances between set points in the vessels' profiles. These measurements, which do give more precise categorisation of ceramic assemblages, are not, however, always possible to implement. A significant obstacle to the classification of shape is the fragmentation of the available ceramic collection. Rim sherds are most informative, as

they allow for identification of orifice diameter and the approximate size of the vessel, and the wall orientation. Base sherds are less informative than rim sherds; nonetheless, they can still provide attributes of certain kinds of form, based on the wall orientation at base or the presence of special features, such as pedestals or base flanges (Rice 1987, 222-224). Body sherds are the most difficult to work with and they often constitute the majority of available ceramic assemblages. For a ceramic assemblage in which the majority of sherds are of variable sizes, such as the ceramic assemblage that is the focus of my study, the most efficient system of form classification is the traditional type series.

The traditional type series for form classification in the Maya area recognises common forms such as: plate, bowl, vase, jar, as well as more region-specific forms such as: tecomate, olla, drum, incense burner or chalice. While terms such as ‘tecomate’ could be included in the more general terms, such as ‘bowl’, they are distinguished in this research as they convey more specific knowledge to people familiar with these shapes. Thus, while a tecomate is a kind of a bowl, by using the term ‘tecomate’ it is immediately conveyed the vessel was a bowl of a particular size with incurved walls and incurved rim. Likewise, an ‘olla’ is a kind of a jar but has a large orifice diameter, smaller ratio of orifice diameter to neck diameter (more open vessel than closed) and is often larger in size than traditional jars. Thus, by using some of the terms specific to Maya research, characteristics of shape are easily conveyed.

Vessel part categories include: base, body, neck, rim, support, handle (for definitions see Table 4.4; Sabloff 1975, 24-27). Whenever several vessel parts were identified for a single sherd, the most diagnostic one was recorded in the following order: rim, neck, base, body, appendages. If the sherd represented a significant part of the vessel (ca. 50%

to 90%) the vessel part was documented as semi-complete. Pots with ca. 90% or more of their body intact were separately catalogued as complete.

Table 4.4 Definitions of vessel part categories.

Vessel Part categories	Definition
Base	Bottom of a vessel where change of angle or curve indicates start of side; for vessels lacking sides it is the part in contact with the ground or support
Body	The main portion of the vessel sides between the base and neck or rim
Neck	Portion of the vessel between the rim and point of inflection separating neck from the body
Rim	Area between the change of direction of side or neck and the lip, or the margin of a vessel orifice
Support	An appendage attached to the base of the vessel which prevents the base resting on the ground
Handle	An appendage attached to the side or neck of the vessel used for holding the vessel
Definitions based on those published in Sabloff 1975 and customised by the author	

Certain vessel parts are more diagnostic of specific vessel forms than others. For this reason, some of the form categories had to be generalised, especially when no clear diagnostic features were found on the analysed fragments (these mainly involved body and base sherds). In such instances, the vessel form categories were documented as: ‘bowl/plate’, ‘bowl/vase’, or ‘open’ and ‘closed’ forms. Open forms are those which enable easy access to the interior of a vessel and its contents (plates, most bowls, most vase shapes). Closed forms are those which limit access to the interior and the contents (jars, tecomates, certain shapes of vases and bowls). In the cases of many unslipped and eroded body sherds it was impossible to identify the vessel form even in the broadest of terms. Therefore, a section of the ceramic material is non-diagnostic and listed as ‘Unidentified’. In total, there are 14 vessel forms recorded as distinct categories; however, not all these categories reflect the same level of detail in the data. The full list

includes categories of: jar, olla, bowl, plate, vase, tecomate, incense burner, lid, drum, bowl/plate, bowl/vase, open form, closed form, miniature vessel.

Any special features of the vessel form preserved within the analysed fragments were also duly documented. These include: flanges, handles, supports, any functional appendages, and special types of vessel parts such as pedestal bases, flanges, Z-angles etc. In total, eight special form categories were recorded in the dataset: labial flange, medial flange, basal flange, pedestal base, annular base, support base, sharp Z-angle, round Z-angle.

Finally, all the classified sherds were counted and weighted within the individual categories of types, varieties, form, vessel part, and special features for each of the analysed contexts. Sherds which were refitted and belonged to the same stratigraphic context (regardless of the unit and lot numbers) were counted as one fragment.

Modal classification – Modes of decoration

The modal study of the attributes of decoration required using a separate sample from the pool of the diagnostic sherds from the five selected El Zotz complexes. The size of the selected sample for the modal analysis depended on the preservation of the investigated attributes within ceramic fragments. As a result, the modal classification is based on a different sample of sherds than the taxonomic sample. Each sherd classified within the modal system has the contextual and typological information and can be linked back to the taxonomic analysis.

The size of the sample for modal analysis of decoration was largely dependent on the surface preservation of each ceramic fragment. Only sherds exhibiting signs of surface decoration were examined; this includes decorative techniques of slipping, painting, incising, impressing, applied decoration, carving and the like.

The information about the decorative technique on a vessel can sometimes be retrieved from the taxonomic classification because the surface treatment attributes constitute the basis for the type-variety system in the Maya area. Thus, the names of most types and varieties contain information about the decorative technique used: for example, Lucha Incised (black slipped vessel with incised decoration; Figure A.49, Figure A.51, Figure A.52) or Saxche-Palmar Orange Polychrome (vessel painted with polychromy, at least 3 colours, on an orange background; for example, Figure A.5, Figure A.6, Figure A.7, Figure A.14, Figure A.22, Figure A.23, Figure A.27, Figure A.28). However, in cases of multiple decorative techniques used on a single pot, most often only one of them is listed in the type-variety name. In such instances, the information about vessel decorative attributes is partially lost. For this reason, the modal analysis focused on recording all the decoration techniques used on every decorated fragment in order to mitigate information loss (for example, Figure A.50).

Designing the method for recording the content of the vessel decoration was the most problematic out of all the taxonomic and analytical classifications. This was mostly because describing certain attributes as elements and identifying associations between them can be rather subjective. As mentioned before, the recorded data include information on elements, motifs and basic units visible on the sherds. The elements are recognised as the smallest single units of decoration: for example, dots, lines, circles and the like. The motifs are then combinations of at least two separate elements: they can be composed of the same type of element (e.g. two lines, dots arranged in a string around the vessel wall) or a number of different elements. Basic units are the arrangements of different elements or motifs which re-appear on different vessels and can be viewed as complete conceptual design parts by the ancient Maya. Not every decoration would include the basic unit level or a motif, as some decoration can be

composed of single elements. Thus, distinguishing and documenting these three levels of decorative modes serves as the first stage in recognising the ‘complexity’ of the decorative content.

There is a great variety of imagery themes represented in Maya ceramic art (for examples, see Appendix A). The elements themselves at times go beyond straightforward geometric shapes. Different degrees of realism in art and art styles may affect the definition of decorative attributes, as seen for instance in the history of pictorial representation of vase painting in Ancient Greece (Kozbelt 2006, 141). There are representational or naturalistic, figurative, realistic styles in which the pictures of things are portrayed more or less accurately or realistically with the emphasis on their form. Abstract, iconic and geometric styles reduce the subject of the image to a selection of particular features which are regarded as essential to convey the likeness of image to the real object, be that colour, shape or texture (Rice 1987, 247; Crowther and Wünsche 2012, 1). The realistic art styles can be further subdivided into two kinds of design styles. Configurative Designs aim to achieve likeness with little distortion in the image, and Distributive Designs sacrifice realism to a need to fill a given space completely so that the relationship between parts in the image is distorted (Rice 1987, 247-248).

Thus, given the great variety of design themes portrayed on Maya ceramic vessels, there was a need to distinguish further between realistic and abstract decorative styles. The abstract images include all geometric and iconic or symbolic elements and motifs, such as squares, circles, triangles, lines (for example, Figure A.4, Figure A.22, Figure A.23, Figure A.26, Figure A.27), ‘step-fret’ motif (for example, Figure A.19, Figure A.20), ‘key-hole’ shapes (for example, Figure A.20), ‘jaguar spots’ (for example, Figure A.28 – Figure A.31). The composite elements such as pseudo-glyphs (for example, Figure

A.5, Figure A.6, Figure A.7) will also be classified as parts of the abstract styles as they use a set of abstract elements in an attempt to resemble writing. The realistic designs include representations of plants, animals, human and mythical or deity figures (for example, Figure A.8, Figure A.11 – Figure A.14). The distinction between realistic and abstract decoration helps us to differentiate between designs which were created to represent real historical or imagined scenes with actors and real-life things, and designs of purely abstract artistic thought (Crowther and Wünsche 2012, 1; Chilvers 2014). Glyphs (for example, Figure A.9, Figure A.10, Figure A.15, Figure A.16, Figure A.17) are classified in a group of their own as symbols of the writing system.

Because of the detailed nature of the modal analysis it was crucial to build a sample representative of the different artistic designs. In several instances it was possible to attest that an eroded sherd had surface decoration but all the features of the design were subsequently lost; these sherds were labelled as eroded and cannot be used as part of the modal analysis of decoration. The sherds which were well-preserved and showed clear designs were further photographed during the classification process.

4.5. Theory and method of analysis

Bearing in mind the various limitations of identifying an object's value, the socio-economic status of studied populations from El Zotz will be based on the assessment of the relative values of classified ceramic assemblages viewed as collective units that were recovered from the five selected El Zotz complexes. The data generated by the different ceramic classifications are used in my research to identify trends in consumption behaviour of local population groups. Several lines of analysis of El Zotz ceramic data are followed in the research reported herein and each avenue highlights a different aspect of socio-economic behaviour that is reflected in the material remains.

The analyses include: Production Step Index Analysis, Surface Treatment Analysis, Heterogeneity Measure, and Decorative Complexity Analysis.

4.5.1. Production Step Index

The analysis of **Production Step Index (PSI)** designed for this research stems from the work of Feinman and colleagues (1981) “The Production Step Measure: An Ordinal Index of Labor Input in Ceramic Manufacture”. In their study, Feinman and his colleagues investigate relative labour input into the production of ceramics based on the number of steps required during the production process. The study is based on the premise that the relative amount of labour involved in the production of fine, highly decorated ceramics is unequal to that involved in the production of plainer, utilitarian ceramics. The production step measure aims to justify in an empirical way the subjective division between the ‘fine’ and the ‘coarse’, or the ‘costly and elite’ and ‘inexpensive, non-elite’ ceramics, and to establish the possible intermediate categories of these objects. Thus, it is suggested that the production step measure and distribution analyses of the resultant values aids in distinguishing patterns of differentiated wealth and social status (Feinman et al. 1981, 873).

Miller (1980) demonstrated that through the distribution analysis of ceramics with varied labour input in their production, it is possible to infer socio-economic differences among consumer groups. The Production Steps Index analysis scores objects based on the number of steps necessary for their production. The higher the scores, the more steps were involved in production and the more labour-intensive the production process. Miller’s study supports the argument that a concentration of labour-intensive ceramics tends to be associated with locations of economic and/or political importance. The distribution of such ceramics also often correlates with the distribution of rare, exotic and other costly items which are usually status-related (Feinman et al. 1981, 874).

Both works, by Miller and by Feinman and colleagues, quantify all of the steps of production of a ceramic vessel, including the preparation of clays, formation of the vessel, and any further surface treatment and decoration. They recognise the limitations of this method as the obtained values are arbitrary and do not account for the size of the vessel, the duration of each step, the skills necessary to achieve each step, or the complexity and extensiveness (coverage of vessel's area) of the surface treatment (Feinman et al. 1981, 873).

For the purpose of my research, the method used for scoring the production steps of ceramic manufacture was modified and the labour input was not calculated for all of the production steps of a vessel. The decision to modify the method of analysis was taken partly owing to the fragmentation of the assemblage (meaning some manufacture steps were lost in most specimens) but also owing to the time constraints put on the analysis process (the time available did not allow for more extensive analysis of the large sample size).

In Rice's *Pottery Analysis: A Sourcebook* (1987, 115-166) the production of ceramic vessels is divided into: 1) obtaining and preparing resources, 2) forming the vessel, 3) finishing the vessel (secondary forming techniques and surface finish), 4) decorating the vessel (enhancing the surface), and 5) drying and firing. The current PSI analysis focuses on the steps of surface enhancement, or decoration, as they are the most readily identifiable attributes of any ceramic fragment.

Surface enhancement is defined as an 'embellishment of a vessel beyond the procedures used in forming the clay mass into the final vessel shape and finishing its overall surface' (Rice 1987, 144). The embellishment, or decoration, can be cut or impressed into the surface of the vessel and can occur in the form of clay and non-clay joins to the

surface or as various colour additions (pigment painting, slips, glazes), (Rice 1987, 144-152). These are the steps that give socially significant meaning to the vessel by enabling information exchange through colour, style or design. Porter (2012, 336-338) argues that aesthetic perceptions condition the value creation and that aesthetic value is the most inherent value of any object even before cultural values are assigned to it. Thus, the higher scores of production steps of surface enhancement – one of the most defining elements of an object's aesthetics – signify more labour invested into the non-practical and non-utilitarian features of the vessels. The decorative features have greater potential to increase the social value of the object as well as the cost of its production. As argued by Flad (2012, 311), certain aspects of an object's value can be measured through absolute labour investment or through the investment of particularly skilled labour. The steps of surface enhancement, of the vessel's decorative finish, are here considered an investment of skilled labour as opposed to the skills used for other steps of pottery production. According to the theory behind this approach, acquisition of vessels with higher decorative-step scores required greater purchasing power and/or higher social rank. Therefore, the analysis of decorative steps, similar to the analysis of all production steps, allows us to identify the potential differences among consumer groups – differences which are closely associated with social and economic criteria (that is, when objects are acquired for social, cultural, or prestige reasons) rather than with the varied utilitarian needs of individuals or households (when objects are acquired for their domestic functionality).

There are fifteen different kinds of surface enhancement methods recorded for all the analysed ceramics in the collection. The surface enhancement methods received scores between 0 and 2 steps depending on the amount of supplementary activities or tools that were required to achieve the final decorative outcome. Scores of 0 were given to sherds

not exhibiting any surface enhancement (Unslipped types) as well as to the method of striation of the vessel surface. Even though creating striations requires the use of tools on vessels' surfaces and clearly constitutes an additional step in pottery production, there is little evidence to suggest they are used for decorative purposes. Striations are largely found on utilitarian vessels made in a manner similar to the Unslipped varieties. In many instances the sherds not showing any striations on the surface might simply belong to a non-striated part of a striated vessel, such as neck or rim, which makes the distinction between the two types quite problematic from a typological point of view (Foias 1996, 187). It is also argued that the striated surfaces of water jars cooled the vessel contents as well as provided a better grip of the containers, thus, making these additions to the ceramic surface a more practical, rather than purely aesthetic, solution (Demarest 2004, 140-141). Because the two types of pottery, Unslipped and Striated, were mostly used for the same set of utilitarian purposes, and the striations were not intended as decorative elements on the pots (or so is presumed), the striations visible on sherds' surfaces are not counted as a surface enhancement step.

Scores of 1 were given to decorative activities such as incising (with one single tool), finger impressing, channelling, carving, coating a vessel in a 'wash', preparing a slip, slipping, preparing one colour of paint, painting, using resist painting. Because each of these activities obtains a score of 1, the final decorative outcome which involves several of these activities is treated as a sum of these scores. In this way, a ceramic type of, for instance, Lucha Incised (an Early Classic black slipped incised type) would receive a score of 3 in total:

Lucha Incised = (preparing of a slip) 1 + (slipping) 1 + (incising) 1 = 3 decorative steps

Polychrome painted vessels would receive some of the highest scores as the activities include the preparation of each colour of paint and the action of painting. Using the resist or reserve-resist technique for polychrome painting is given an additional score of 1 because it involves the preparation and use of waxy or viscous material whilst creating the design on vessel's surface. The viscous material is applied in between different colours of paints and slips to create the final negative-style decoration (Muñoz 2006, 18).

Scores of 2 were given to more complex and also less frequently seen methods of decoration within the analysed sample. They include: creating a relief decoration, modelling, adding appliqués, gouging-incising, creating impressions with tools, stuccoing, creating decorations with the use of a mould. These methods of decoration were given the highest scores either because they required a preparation of additional elements and their application to the surface of the vessel (such as clay appliqués, stucco appliqués, moulds, impressing tools for specific shapes) or they required the use of multiple tools (such as gouging-incising, creating relief), or shaping of the existing vessel clay walls into decorative shapes (modelling).

The Production Step scores were calculated for each analysed sherd. These scores were then summed up for the contexts of different El Zotz structures within each architectural complex. The summarised results were subsequently divided by the count of sherds to produce the average score for each complex – the Production Step Index – which can then be used to compare the ceramic collections across all five locations.

In order to understand the differences between PSIs from different complexes more completely, the composition of scores within each Index was analysed in order to detect the scores, and as a result, the ceramic types which most influenced the final PSI results.

4.5.2. Surface Treatment Analysis

Estimating the labour-intensiveness of production of pots is not, however, equal to indicating which vessels were in fact goods of limited access. Goods are considered to be of restricted access when only certain small segments of society are capable, or allowed, to acquire them. Thus, other forces than the amount of work put into the production of objects may define the distribution of these objects among different consumer groups. One of these forces is taste – an extensively investigated concept in the work by Pierre Bourdieu, *Distinction* (1984). Bourdieu defines taste as the ‘faculty of immediately and intuitively judging aesthetic values’ which determines individuals’ and groups’ preferences for certain things over others (Bourdieu 1984, 99). However, I would extend this definition to include forms of value other than aesthetic, that is: social, cultural, political, and ideological.

Bourdieu (1984, 5-6) argues that differences in tastes are a natural product of class divisions in a society and originate from the need to distinguish oneself as belonging to a particular social class. The foundations for his theory are largely set in the realities of historical European societies; however, even though some of his arguments are tailored to describe a modern class society, the underpinning reasoning is worth discussing in relation to pre-modern class groups.

Bourdieu distinguishes in his work between the ‘taste of necessity’ and the ‘taste of liberty, luxury’ (Bourdieu 1984, 6). The taste of necessity refers to the most efficient ways, objects, foods which satisfy the basic needs of an individual, the needs which are ‘necessary’ for survival. The taste of liberty, or luxury, refers to those objects, foods and behaviours which emphasise form rather than function, and shift the focus towards satisfying higher needs of an individual. Higher needs are those which are not essential for survival, and thus, are normally satisfied only after the basic needs have been met.

This is why higher needs are usually linked to luxury items and services as they are associated with the surplus of individuals' social and economic resources. With the excess of available resources, the individuals experience more liberty in choosing the things they consume and how they consume them. While Bourdieu referred to this concept as the 'taste of liberty, or luxury', I would argue it is less determined by an individual's aesthetic preferences and more by economic or social capabilities.

Bourdieu argues that to some extent taste is influenced by the amount of accessible economic capital but that social rank is a stronger factor affecting the distribution of things of different 'tastes'. However, the individuals' 'tastes' do not necessarily equal the things they acquire and the things they do. The economic condition (the purchasing power) and the social rank of individuals determine whether they are able to acquire things of certain 'taste' and not their exact personal preferences. Thus, the relationship between the things acquired and personal taste is not always as straightforward as Bourdieu presents it. His argument, however, does support the position taken in my research in that there are 'functional, utilitarian' aspects of objects and 'non-functional' aspects and the non-functional attributes of things are the ones which have the most potential to differentiate social classes.

Bourdieu goes further to argue that the consumption of objects of 'art' and 'culture' is predisposed to legitimize social differences (Bourdieu 1984, 7). This argument is especially well-illustrated by the evolution and transformations of artistic imagery on Maya pottery. It further confirms that decorative aspects of ceramics, the artistic and cultural attributes, have significant potential to identify the socio-economic differences within societies.

The ceramic study of changing elite taste at the complex of El Diablo was the focus of the Masters research of Alyce de Carteret (2012), one of the members of the El Zotz Archaeological Project and a student at Brown University, Rhode Island. In her work, she points out the importance of the shifting popularity of the red colour of slipped ceramics through time at the hilltop complex of El Diablo. Following her findings, my analysis will explore aspects of differentiation in colour and decoration on El Zotz ceramics and how these aspects can account for the differing and shifting tastes among all five selected groups through time.

Surface Treatment Analysis involves a distribution analysis of specific aspects of decoration on pottery through space and time. The first stage of this analysis will investigate the distribution of Unslipped, Monochrome and Bi/Polychrome categories of pottery at El Zotz. Next, the Monochrome category will be divided into three colour categories: Red/Orange, Black/Brown and Other. The reasons behind choosing colour categories broader than those suggested by the type-variety system used in the Maya area stem from the works on the ancient Maya's perception of colour and techniques of colour preparation. The red, orange and yellow hues are produced from iron oxides and the final colour depends on the oxidation environment during firing. Similarly, the black and brown colours both result from manganese compounds (Houston et al. 2009a, 62-67). The majority of slipped vessels are not uniform in colour; the shades and hues frequently vary depending on the part of the vessel, the temperature and oxidising levels during firing. By combining certain colours into one category, it is possible to eliminate some of the technological inconsistencies of the manufacturing process from the analysis. Moreover, the black and red group colours have a wide range of proven meanings to the ancient and modern Maya, including symbolic and cosmological (Houston et al. 2009a, 78). Thus, as suggested by ethnographic, ethnoarchaeological

and epigraphic studies, the research of such broad colour categories might in fact produce meaningful and informative results as they are more likely to reflect the aesthetic intentions of the ancient Maya of El Zotz rather than the subjective perceptions of colour of the modern day analysts.

Colour (positive decoration) is only one possible aspect of the pottery surface enhancement, the other being labelled ‘non-colour decoration’ (negative decoration) on the ceramic surface. The term ‘non-colour decoration’ here denotes any decorative steps in the pottery production process which alter the surface of the vessel but do not affect the colour of its surface. With the exception of a few techniques, the most common order of applying multiple surface enhancements is to determine the colour first (with slips, glazes, paints) and subsequently to apply other techniques of decoration, such as incising, impressing, carving. In some instances the order of the alterations may be reversed, for example, when the decoration of the vessel is first modelled or applied and then covered in the desired colour. In this investigation, all the techniques of surface enhancement which are visible on the studied pottery and which do not include colour alteration, regardless of the order with which the steps were performed during the production process, are here listed as ‘non-colour decoration’.

Thus, the third stage of Surface Treatment Analysis includes the distribution analysis of colour addition categories (Unslipped, Monochrome, Bi/Polychrome) coupled with the ‘plain’ and ‘non-colour decoration’ subcategories. As a result, the correlations of any relevant patterns in colour and non-colour decorative modes can be detected and investigated chronologically and spatially. These two aspects of decoration (the colour addition and other non-colour decorative modes) were chosen to enhance the results of PSI. The Production Step Index analysis uses both these decorative aspects to create general, collective and measurable scores for objects, but cannot provide information on

relationships between each of these attributes individually within the consumption patterns of human populations. Because the value of objects cannot be solely based on production step analysis, these two categories of decorative attributes (colour and non-colour decoration) are studied to establish which categories in ceramic appearance were potentially significant for the different consumer groups at El Zotz at different times.

The attributes used to categorise the ceramic material in the Surface Treatment Analysis derive from the taxonomic classification (as it focuses on the exact set of surface attributes needed). The ceramic types and varieties which show meaningful patterns in the Surface Treatment Analysis will be investigated through the **Heterogeneity Measure** (after the work by Garraty 2009).

4.5.3. Heterogeneity Measure

Heterogeneity forms one of the components for measuring diversity in population or assemblage alongside the richness and the evenness indexes. Garraty (2009) originally used the Heterogeneity Measure to assess the existence and scope of marketplace exchange in the lower Blanco region and Teotihuacan. The study of marketplace exchange based on the distribution of various material remains was previously put forward by Hirth (1998), whose works were fundamental for Garraty's paper.

According to Hirth, a uniform distribution of different types of goods throughout various types of households (elite and non-elite) signalled the presence of a marketplace exchange in which all the segments of society had access to the same range of objects. Alternatively, an even distribution of objects across households can be the effect of a centralised distribution system (as was found, for example, in communist states), (Graham 2012, 422). Any disproportion in the distribution of certain kinds of objects would imply an unequal purchasing power of individuals or social groups, or the presence of various alternative forms of object distribution which are based on socio-

political relationships (such as gift-giving) rather than a market economy (Hirth 1998, 456).

The presence of market or marketplace exchange at El Zotz is not under consideration in the current research. However, several arguments which stem from works by Hirth and Garraty can be applied to the assessment of consumption patterns at El Zotz and the socio-economic status of its inhabitants. Following Hirth's argument, widespread distribution of some types of objects among all five complexes would mean these objects were accessible to the inhabitants of all these sectors, either due to equal purchasing power (economic wealth) or due to the use of the same market or non-market distribution networks based on similar social status. Differences in the distribution of certain types of objects will suggest that some groups did not have access to these goods either due to insufficient wealth or lower social rank. The differences between assemblages can also stem from socio-cultural differences between populations, such as activities they were involved in or the diversity of household occupants. Ultimately, in both kinds of distribution – the marketplace exchange and the provisioning networks – the access to certain types of goods is determined by either economic wealth or socio-political status or both.

Heterogeneity Measure of El Zotz ceramic assemblages is calculated through ANOVA analysis of ceramic data (Garraty 2009, 160-162; VanPool and Leonard 2011, 153-175). Ceramic groups selected for Heterogeneity Measure analysis are those which show most prominent patterns of uniformity or differentiation after the PSI Analysis and Surface Treatment Analysis. These ceramic groups will include plain as well as decorated ceramic types in order to provide a varied sample and better control over the statistical analysis. Ceramic data used within the multivariate calculations equate to the proportions of sherds of a selected ceramic group at each individual structure and area

within the architectural complexes. The proportions of sherds at different structures within a complex are treated collectively as an ‘assemblage’, or a ceramic marker, of the architectural complex during a specific chronological phase. The ceramic markers of different complexes are then compared using the ANOVA statistical method. As a result, I am able to investigate whether the patterns of uniform or differentiated distribution of various ceramic types across different architectural complexes are statistically relevant. It is then assessed whether the presence of marketplace and other distribution networks can be detected at the site.

4.5.4. Decorative Complexity Analysis

The analysis of decorative content of ceramic designs identifies differences among decorated sherds which are not immediately visible through typological analysis. Firstly, the designs are classified into realistic, abstract (geometric) and iconographic (with glyphs). I then analyse the distribution of each design type among the architectural complexes and through time in order to identify the presence of consumption behaviour in reference to different decorative categories. As discussed in previous chapters, creating certain kinds of decorative elements required specialised knowledge, such as knowledge of the writing system, or access to events, such as elite courtly events, which are later depicted in ceramic imagery. Often, vessels depicting elite scenes and/or inscribed with glyphic texts were commissioned by Maya royal and noble families (West 2002, 167; MacLeod and Reents-Budet 1994, 141; Reents-Budet et al. 2000, 117). Concentration of vessels with elements and motifs such as glyphs, human figures or mythical scenes (figurative decoration types) in certain locations can be indicative of concentrated, rather than distributed, wealth among the social groups at El Zotz.

Different decorative element types visible on each specimen were recorded, counted and, whenever possible, identified as part of motifs. However, because of the relatively high fragmentation of El Zotz ceramic assemblage, it was problematic to identify features more advanced than small motifs. For this reason, the larger motifs and designs or configurations on El Zotz ceramics were frequently inferred from partial information and cannot be reliably used in statistical analyses. Therefore, decorative elements, the smallest units of decoration, are used to assess the amount of labour put into creating each design. Applying the same arguments employed to derive Production Step Index (Feinman et al. 1981), it is postulated that the more elements were included in the design, the more labour and time was necessary for the completion of the decoration; consequently, vessels with a greater number of elements presumably had a greater value.

All decorative elements were given scores of 1. An additional score of 1 was assigned to glyphs, human and mythical elements to represent the specialised knowledge needed for their production; thus, the realistic and inscription designs score at least 2 points. All the points assigned to each sherd, which represent the variety of elements depicted on a vessel, were summed up; the sum of all scores for each architectural complex was then divided by the total count of decorated sherds. Thus, the count of different elements serves to assess the complexity of decorative designs through the decoration 'scores', or Decorative Production Step scores. These scores are relative numbers reflecting the amount of work, skill, creativity and knowledge invested in designing, implementing and attaching meaning to a decoration on a vessel's surface. Vessels with top scores are considered to have more complex designs capable to convey more complex meanings, whereas vessels with lower scores are thought to have more modest ornamentations with simpler symbolism.

The Decorative Production Step scores are compared among the studied architectural complexes for different chronological phases. Similarly to Production Step Index, the Decorative Production Step scores will show relative proportions and frequencies of sherds with more and less complex designs. Locations with higher proportions of vessels with complex decorations – locations with higher Decorative Production Step scores – are most likely places of concentrated wealth and higher social class.

In summary, each of the consecutive methods of analysis of El Zotz ceramic assemblage aim to delve deeper into the variations among ceramic types and to establish finer levels of differentiation between ‘prestige’, ‘high-value’ and ‘low-value’ ceramics. The assessment of results of ceramic analysis is always embedded within the established chronological sequence of the site and spatial and structural configurations of the studied El Zotz complexes.

4.6. El Zotz ceramic sample overview

4.6.1. Diagnostic ceramic sample

The total sample analysed for the current research was recorded from 943 distinct lot contexts excavated from 49 structures and features across the five investigated complexes. The total number of sherds recorded in the sample amounts to 54,166 fragments, of which 39,264 are diagnostic (72.49%) and 14,902 sherds are eroded (27.51%).

Table 4.5 presents the distribution of the ceramic sample across the five complexes and their diagnostic composition at each sector. The vast majority, around 68%, of the sample was recovered from the Acropolis complex and the remaining 32% was distributed across the other four sectors. Thus, the great majority of the diagnostic content of the analysed ceramics (66.81%) originates in the Acropolis area. This pattern

is caused by several factors, such as the excavation strategies, longevity of occupation, the size of the excavated structures and the formation of the stratigraphic contexts.

The proportion of diagnostic to eroded pottery within each complex ranges from 62.79% at El Diablo to 81.10% at Las Palmitas. These relatively large discrepancies in preservation of ceramic material might be the result of excavation strategies (the proportion of more eroded surface deposits within all the excavated contexts at each complex), the chronology of occupation (the older the site, the poorer the preservation), the abandonment behaviour and/or the chemical composition of the soil (however, no scientific data are available to confirm this at the moment).

Table 4.5 Ratio of diagnostic to eroded sherds at the five selected complexes.

El Zotz Complexes	Sherd Count			% of Assemblage	
	Eroded	Diagnostic	Total	Eroded	Diagnostic
El Diablo	1,903	3,211	5,114	37%	63%
El Tejón	119	375	494	24%	76%
Acropolis	10,626	26,232	36,858	29%	71%
Las Palmitas	1,683	7,222	8,905	19%	81%
Group K	571	2,224	2,795	20%	80%
Total	14,902	39,264	54,166	28%	72%

Numerous structures, features and areas of each complex were excavated, allowing for a relatively balanced assessment of the complexes' general chronological, structural and cultural dimensions. Figure 4.1 summarises the sizes of ceramic assemblages as recovered from distinct parts of each of the five complexes.

By far, the single structures and features which yielded the largest amount of ceramics are the ones located at the Acropolis and Las Palmitas. This pattern is most likely affected by the size of the structures and the intensity of excavations.

When considering each excavated structure or area separately, there appear substantial differences in the ratios of diagnostic to eroded sherds. When excluding units with samples smaller than 30 sherds, the preservation levels range from 90% (in Palmitas Looters' tunnels) to 11% (in Courtyard 2 at Acropolis). The median for the preservation levels is 69%. The areas which have the highest preservation scores seem to include the areas of chronologically later occupation, structures with multiple sealed contexts, and areas of limited disturbance.

It is clear that the amount of ceramic material recovered from the Acropolis structures skews the comparative results. Thus, it is necessary to only compare proportionate ceramic data calculated for each architectural complex. The proportionate or relative results in each method of data analysis are achieved through relating different ceramic types to the total amount of excavated sherds from each location.

4.6.2. Types and varieties in the El Zotz Ceramic Sample

The large sample size and the wide chronological range selected for my study mean that there is a large number of different ceramic types and varieties recorded for the entire diagnostic sample from El Zotz. The need to record surface treatment elements on otherwise unknown ceramic types further inflates this number. As a result, there is a total of 194 different ceramic type-varieties recorded for the five El Zotz complexes, excluding the eroded and unidentified categories. Such high differentiation in ceramic types means that ultimately a high number of the ceramic typological categories are under-represented. In fact, the median count of ceramic sherds per a type-variety

category is 2, which means that at least 97 of the recorded type-varieties are represented by only two or one sherd. The sherds classified into the top ten most frequent type-variety categories at El Zotz constitute 87% of the total diagnostic sample (Table 4.6).

Table 4.6 Frequencies of most common ceramic types across the El Zotz complexes.

Ceramic Type-Variety	Acropolis	Las Palmitas	El Diablo	Group K	El Tejón	Total
Encanto Striated	5,939	1,925		673		8,537
Cambio Unslipped	4,871	2,628		722		8,221
Tinaja Red	5,221	1,434		509		7,164
Triunfo Striated	2,090		936		98	3,124
Aguila Orange	2,016	6	861		69	2,952
Quintal Unslipped	549		805		143	1,497
Saxche-Palmar Orange Polychrome	875	182		106		1,163
Dos Hermanos Red	461		122		32	615
Infierno Black	333	133		29		495
Balanza Black	372		95		9	476
% of Total	87%	87%	88%	92%	94%	87%
Other	3,505	914	392	185	24	5,020
Total	26,232	7,222	3,211	2,224	375	39,264

Such fragmentation and diversity in the analysed sherd sample can be a hindrance for a traditional type-variety analysis because low numbers of items within a high number of categories is problematic for many statistical analyses. However, the data analysis methods employed in my research utilise categories, such as number of surface enhancement steps or broad colour and non-colour decorative groups, which, in most part, overcome the issues of high variation of categories within the sample.

4.7. Context and sample challenges

Studying the elite complexes of El Zotz did not happen without its challenges. The strategies and locations of excavation areas at the site were the biggest factors

delineating the scope and depth of my research. The positioning and sizes of excavation pits and tunnels at El Zotz complexes were planned by the directors of the archaeological project. The excavation strategies employed to investigate different areas around the site resulted in the recovery of different composition and preservation levels of the artefact assemblages. Results throughout this research were affected by the disparity in the volumes of excavation works at and around the Acropolis and at other sectors of the site. More focus was given to the monumental architecture of the Acropolis than to some of the other El Zotz complexes. The fact that two tunnels and multiple deep excavation pits were dug through the Acropolis structures contributed to the much larger volumes of ceramics being recovered from this complex compared to other El Zotz complexes.

The excavation methods as well as the history of architectural development at different sectors of the site had a crucial effect on the preservation levels of the recovered ceramic material. Areas with greater incidence of overlaying construction contributed to better preservation of older material culture trapped and sealed underneath sequences of floors and various construction levels. The Decorative Production Step Index analysis was affected by the sample bias and preservation bias. The great majority of the whole Decorative Sample came from the Acropolis area. Thus, the methods of analysis selected for my research had to cater for all the disproportions in sizes and preservation levels of ceramic assemblages excavated from different El Zotz complexes.

The varied quality and types of contexts which produced the ceramic sample for my research (construction cores, floor ballast, collapse material, primary deposits, rubbish pits, humic layers, to name but a few) challenged the successful synthesis of my ceramic data. The analysed ceramic assemblages originated both from contexts which can be dated with confidence, such as those located underneath clear construction

layers, as well as contexts which contained mixed material. Greater degree of quality control over the excavation contexts and greater uniformity across the investigated areas would have reinforced the reliability of the comparative sample; it would have also strengthened the chronological dating of stratigraphic layers. A different approach would be to construct my ceramic sample only from sherds which were excavated from securely dated, sealed contexts, and those clearly associated with construction or special events. This would, however, significantly reduce not only the quantity of ceramic material available for my study but also the number of locations eligible for the analysis. Numerous locations included in my research, including the structures of small-scale architecture, contained few to none of the sealed, desirable stratigraphic contexts. As a consequence, most of the smaller structures would have been excluded from my study. Thus, while I recognise there will be limitations to my ceramic sample based on the contexts' quality across different areas of the site, I intended to incorporate the smaller as well as the larger structures of the analysed architectural complexes at El Zotz with all of their stratigraphic variety.

Another issue I had to address, in addition to excavation strategies, was the provenance of the deposited material which made its way into my analysis sample. A big proportion of the ceramic material found at El Zotz comes from construction cores of platforms which are secondary deposition contexts (Schiffer 1972, 161). I had, therefore, to be reasonably secure that artefact assemblages within my research belonged to and were left behind by the proximal population groups (households) rather than a group that comprised a larger site population. We cannot identify the exact individuals who might have been associated with the analysed objects, but we can make informed assumptions about the likely deposition process happening at the site. The population groups who resided near the places of artefact deposition are more likely to be associated with these

objects than the groups residing further away. For this reason, I had to select architectural complexes that are located at a distance from one another. The distances between complexes helped me to uphold the reasonable assumption that the material recovered from one analysed sector of the site did not come, or was not transported, from another of the analysed sectors of the site. That is not to say that such instances could not have happened, as people certainly moved objects around the site, but the distance between architectural groups makes such artefact journeys less likely.

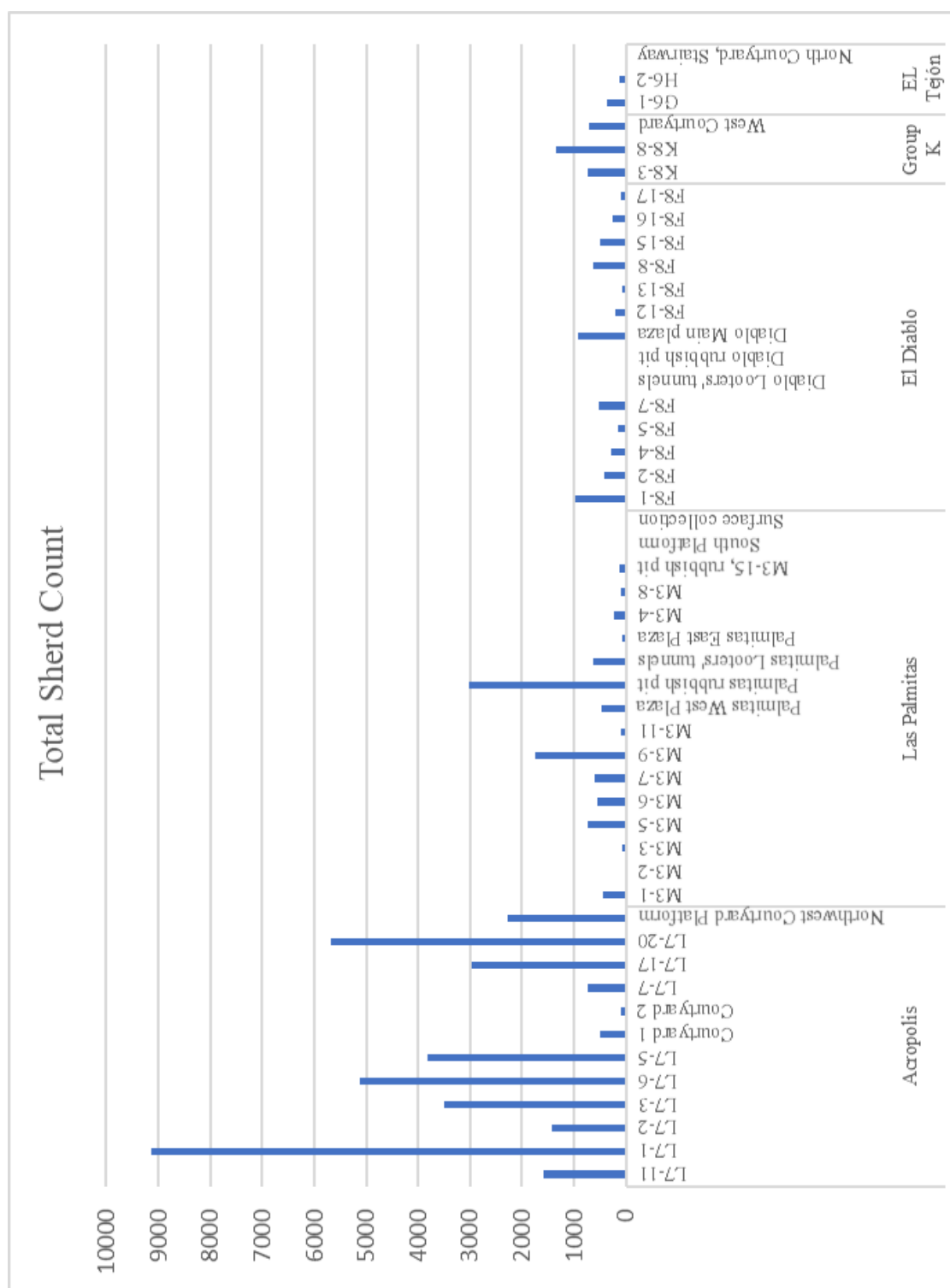


Figure 4.1 Count of sherds per excavated area at El Zotz.

CHAPTER 5. Chronological Sequence at El Zotz

The chronology of the vast majority of stratigraphic contexts at El Zotz was initially recorded according to the broad time periods established for the Maya area: Middle Preclassic (800-350 BC), Late Preclassic (350 BC – AD 250), Early Classic (AD 250-550), Late Classic (AD 550-850), Terminal Classic (AD 850-980), and Early Postclassic (AD 980-1250). El Zotz experienced most architectural construction during the Classic period and construction and occupation of the site gradually declined towards the Postclassic period. In order to understand the social and economic changes that occurred at the site at the time of its intensive development, there is a real need to subdivide the Classic period into phases of shorter time spans. Ceramics were used to identify the chronological phases which approximate those of Tikal and Uaxactun (Culbert 1993, Smith and Gifford 1966). The identified phases were first described and published by Caitlin Walker (Walker 2009). I have further expanded information on the ceramics and dating in the following research.

Using the method outlined in Chapter 4, I have successfully dated all of the analysed contexts of the five El Zotz complexes into finer chronological phases focusing on the Classic epoch. I have subdivided the Early Classic period into Saquij I and Saquij II phases, and I have added information to support the division of the Late Classic period into Mo' and Caal phases. The resulting chronology of the site provides a more refined framework for further analysis, with each phase of the Classic period spanning approximately 150 years instead of 300 years. (Table 5.1). The Preclassic and Postclassic continue to be defined as longer time periods, in accordance with the traditional chronology of the Central Maya Lowlands, owing to a lack of sufficient dated ceramic material to create finer chronological divisions.

Table 5.1 Chronological phases at El Zotz.

Time Period	El Zotz Phase	Approx. Dates
Late Preclassic	Chub	200 BC - AD 250
Early Classic	Saquij I	AD 250 - 400
Early Classic	Saquij II	AD 400 - 550
Late Classic	Mo'	AD 550 - 700
Late Classic	Caal	AD 700 - 850
Terminal Classic	Cucul	AD 850 - 980
Early Postclassic	Choc	AD 980 - 1250

5.1. Chronological analysis

The ceramic material from each excavated context was dated to one of the seven El Zotz phases (Table 5.1). The numbers of sherds dated to each time period were documented in relation to their spatial and contextual location (Table 5.2). The results of this work provide the historical background for the construction events and occupation activities of the various areas at El Zotz. Chronological analysis of the stratigraphic contexts indicates that the amount of deposited material increased through the Classic period at the site. The Late Classic Mo' phase is the only exception to this pattern and the investigated areas dated to this phase provided considerably less material than the previous Early Classic Saquij II or the later Late Classic Caal phase. The greatest amount of pottery was dated to the Terminal Classic Cucul phase, which was then followed by a marked decline in deposited material dated to the Choc phase, or the Postclassic period.

Based on these trends, we can say that the intensity of ceramic production and discard intensified at El Zotz throughout the Classic period. However, to understand more

clearly the underlying reasons for the fluctuating numbers of recovered ceramics through time, it is necessary to examine the characteristics of the chronological phases, the nature of the archaeological contexts, the regional events which might have impacted on ceramic production and consumption and the excavation strategies which most likely affected the final assemblages.

5.2. Ceramic complexes through time

5.2.1. Late Preclassic Chub phase (200 BC – AD 250)

The Chub phase, or the Late Preclassic period, is the earliest chronological phase identified for the analysed complexes, although it is known that the South Group sector was occupied even earlier, during the Middle Preclassic. The ceramics of this phase share characteristics with Mamom-style pottery from the site of Uaxactun (Smith 1955), and also with pottery from other Preclassic sites in the region of the Buenavista Valley, such as El Palmar, investigated by James Doyle as part of the El Zotz Archaeological Project (Doyle 2013). Chub pottery is best recognized by its waxy slips, thick walls, rounded vessel rims, and by decorative elements such as labial flanges. The most common ceramic types of this complex are Sierra Red, Polvero Black, Zapote Striated and Flor Cream.

Preclassic pottery is the least numerous in the diagnostic assemblage analysed in my research (excluding all the eroded sherds) and accounts for only 90 sherds in total (Table 5.2). Sixty (60) sherds were recovered from the Acropolis area with the majority found in contexts located underneath the earliest excavated floors at Str. L7-6 (40 sherds) and the rest found in later contexts mixed with Early Classic and even Late Classic ceramics. Similarly, five Chub phase sherds were found in the mixed contexts of looters' tunnels and below the patio floor at Las Palmitas. The small numbers of Chub

phase sherds and lack of association with a construction phase mean that they are unlikely to mark the occupation of this area as early as the Late Preclassic. The sherds were probably transported to the Las Palmitas complex as part of construction material for the erection of structures later in time.

Twenty-five (25) Chub sherds were recovered from the El Diablo complex, relatively evenly spread across most of the structures of the complex. With a prominent presence of Saquij I and Saquij II ceramics, the occasional Preclassic sherds imply that the occupation of this complex began probably at the onset of the Saquij I phase. To the north of the centre of El Diablo complex, Strs. F8-15, F8-16, and F8-17 are the only structures where no Preclassic material was found, possibly indicating that they were constructed and occupied slightly later than the central plaza structures. Also, interestingly, there was no Preclassic material found at El Tejón, which might also signify that this smaller complex was constructed later than the central buildings of El Diablo or the Acropolis. However, it has to be noted that the smaller structures required smaller volumes of construction material and thus their stratigraphic contexts contained lower amounts of ceramics in general. There were also fewer excavation units investigating the smaller structures than was the case with their larger neighbours. It is likely that the excavation strategies of smaller structures and their architectural characteristics created a bias in which later phase ceramics, in this case Saquij I and II, are dominant within the assemblages as they are less eroded and are prevalent in the top layers of stratigraphic contexts.

5.2.2. Early Classic Saquij I (AD 250 – 400) and Saquij II phases (AD 400 – 550)

Saquij I phase pottery marks the first significant chronological assemblage of the selected complexes at El Zotz with a marked increase in the amounts of recovered

material (Table 5.2, Figure 5.1). The royal tomb located underneath temple F8-1 in the El Diablo complex provides an early example of typical Saquij I ceramics and an excellent study collection of 55 complete pots from a primary context at the site. The waxy slips typical of the Mamom and Chicanel periods are replaced with lustrous slips (Petén Gloss ware) typical of Tzakol period at Uaxactun (Smith 1955, Smith and Gifford 1966). Saquij I is also the first phase to include painted polychromes typical of the Early Classic period (Figure A.1 – Figure A.4). The prominent basal flanges and Z-angles characterizing some of the most intricately decorated examples from the tomb are unique characteristics of Saquij I phase ceramics. The red-background polychromes (Zotz Red Polychrome, Newman et al. 2015, 131-144) as well as red monochromes are also found as part of this early assemblage, with the majority of examples retrieved from El Diablo. The elaborate incised, gouged-incised, painted and modelled decoration on pots found in the royal tomb suggests the beginnings of diverse and sophisticated ceramic craftsmanship at El Zotz. The development of El Zotz ceramic artisanship is additionally supported by the resemblance of some of the pieces to highly-decorated pots found in royal tombs at Tikal.

Saquij I pottery was recovered in significant numbers from the El Diablo main plaza structures but not from the northern group of structures, F8-15, F8-16, F8-17, which supports my hypothesis that these smaller platform structures were constructed later than the core or central part of the El Diablo compound. At the Acropolis, Saquij I pottery was found in platform cores of the earliest construction phases of Strs. L7-3, L7-6 and in the floor ballast at the Plaza area immediately outside the main palace compound. Such early deposits were found in these units mainly because of the excavation strategies (deeper excavation pits and tunnels) and it is very likely that during the Saquij I phase, the whole of Acropolis compound consisted of smaller

structures arranged around a central plaza or patio. These structures would have been smaller versions of the monumental platforms which engulfed them during later time periods. Small amounts of Saquij I ceramics were also found at El Tejón, suggesting that this hilltop complex was probably constructed during the initial period of El Diablo's prosperity.

Saquij II pottery, while similar to Saquij I ceramics in many ways, is characterized by increasing numbers of pedestal and annular bases and a greater presence of orange monochromes, which begin replacing and then dominating the red monochromes. During Saquij I the proportion of orange wares (Aguila group, Figure A.60, Figure A.61) to red wares (Dos Hermanos and Caribal groups) is 74% to 26%, and during Saquij II it is 83% to 17%. The basal flanges are still prominent in early Saquij II but become less frequent towards the end of the Early Classic period. Pastes also increase in hardness and shift from soft, 'chalky' pastes of light beige colours in Saquij I to harder pastes of more rosy or orange hues in Saquij II (Czapiewska-Halliday et al. in press).

The dominant ceramic types of both of these Early Classic phases at El Zotz include Quintal Unslipped and Triunfo Striated (Figure A.79, Figure A.80, Figure A.81), which represent the majority of domestic and cooking ware, but these types also comprise some of the cache vessels found inside and outside of the El Diablo tomb chamber (Houston et al. 2015b; Newman et al. 2015). Monochromes with red, orange and black slips (Dos Hermanos Red, Caribal Red, Aguila Orange, and Balanza Black) mark the dominant treatment of the Early Classic, and Dos Arroyos Orange Polychrome is the principal painted ceramic type.

There is generally much more recovered material dated to the Saquij II phase in comparison to Saquij I (Table 5.2, Figure 5.2). There seem to have been more

construction events taking place at El Diablo, El Tejón and the Acropolis at this time. Excavations of the small structures to the north of the main El Diablo compound recovered only ceramics dated to Saquij II. Similarly, the material used to fill the chambers of rooms of buildings at El Diablo and El Tejón before abandonment at the end of the Early Classic period contained almost exclusively Saquij II pottery. Quite a few Saquij II sherds were also found in contexts dated to later phases, especially the Mo' and Caal contexts at the Acropolis area and, to a lesser extent, at Las Palmitas and Group K; however, this is to be expected since Saquij II phase represents intensive occupation and activity at El Zotz.

Judging from the large quantity of pottery recovered from this phase, Saquij II was a period of prosperity for El Zotz with all of the Early Classic compounds – El Diablo, El Tejón, Acropolis – expanding and flourishing. This heightened activity follows the Entrada event (for instance, Houston and Inomata 2009, 106-107; Martin and Grube 2000, 29; Martin 2003, 12-15; Sharer 2003, 320-321; Stuart 2000, 478-481) and the alliance enacted between El Zotz and Tikal (Houston 2008a, 8), as well as a general population increase in El Zotz hinterlands and intensive agricultural activity (Beach et al. in press). Based on the sample of ceramics analysed from El Zotz, we can say that the material culture of the later phase of the Early Classic reflects economic and political stability.

5.2.3. Late Classic Mo' phase (AD 550 – 700)

There is a relatively small amount of material dated to the Mo' phase of the Late Classic at El Zotz (Table 5.2, Figure 5.3). The few contexts that were confidently dated to this phase contained carbon that was dated and calibrated for one sample from Str. L7-1 with a date AD 532–650 (sample Beta-288299, Table B.1). Support for the Mo' dating was also provided by the ceramic characteristics of the diagnostic material, and the

stratigraphic contexts. Of the five architectural complexes selected for my research, Mo' ceramics were only recovered from the core of small-scale construction at the Acropolis main compound. The excavations of some of the structures adjacent to the Plaza of the Five Temples also produced Mo' contexts, and while this material was not included in the present analysis, the characteristics of the pottery from these contexts were used to characterise the Mo' ceramic complex.

The Mo' complex is similar to the Uaxactun Tepeu I complex and marks the first appearance of typically Late Classic types within the El Zotz assemblage. Aguila Orange, which dominated the preceding Early Classic phase, is gradually replaced by Tinaja Red vessels that increase in numbers and ultimately dominate Late Classic and Terminal Classic monochrome production. While Early Classic style ceramics are still present within Mo' contexts, they are less frequent, and some examples appear to have partial Late Classic characteristics: for instance, the typical Late Classic Tinaja Red slip on an Early Classic form. New polychrome types – Saxche-Palmar Orange Polychrome and Zacatal Cream Polychrome (for example, Figure A.5, Figure A.19, Figure A.21, Figure A.22, Figure A.23) – appear in more significant amounts during this phase at the Acropolis (16% of total Mo' pottery) in comparison to the polychromes of the preceding time period (3% of total Saquij pottery). The decoration on these polychrome fragments is extremely varied, with first signs of glyph inscriptions on pots found in refuse deposits, but the vessel forms seem a lot less complex than those found in Early Classic contexts. These early Late Classic polychromes were also treated with a cream calcareous underslip, an additional layer used to create a smooth, clean surface and prepare the vessel for painting (Rice 2009, 120).

As mentioned above, a sample of Mo' material included in this research comes almost exclusively from the Acropolis, amounting to 1,762 diagnostic sherds; only three

fragments were found at El Diablo. The three fragments from El Diablo were found in the northern part of the complex (Strs. F8-7, F8-8 and F8-17) and all were found within the material used to fill the chambers of rooms of buildings. The evidence suggests that Strs. F8-7, F8-8 and F8-17 were abandoned, as was the entire complex, at the very end of the Saquij II phase. El Tejón, the small hilltop complex, was probably abandoned at the same time or earlier, as no Mo' material was found there. At the Acropolis, Mo' ceramics were recovered from all of the major analysed structures at the main compound: L7-1, L7-2, L7-3, L7-5, and L7-6. The Mo' contexts within these buildings are associated with phases of construction that modified and slightly enlarged the complex, although the Mo'-phase efforts were not as extensive or significant as the later constructions covering them.

The ceramic and architectural evidence suggest that the centre of power, which during the Early Classic was set at El Diablo, shifted to the Acropolis at the onset of the Late Classic. The construction of this period focused on the urban core of El Zotz, namely the Acropolis and adjacent areas. Historically, this shift follows the defeat of Tikal by Calakmul and El Zotz's realignment with the new regional power (Houston et al. 2009b, 6; Carter et al. in press). However, the relatively small amounts of material culture dated to this period might signal that El Zotz was not as prosperous under Calakmul's aegis as it was under Tikal's, or that the symbols of power and authority were projected differently following new fashions. It also suggests that El Zotz rulers might have been related to the Tikal dynasty and if so, the city would have had to pay tribute to Calakmul, thus limiting wealth generation.

5.2.4. Late Classic Caal phase (AD 700 – 850)

The Caal phase reflects one of the most intensive periods of construction activity at El Zotz. The great majority of recovered ceramics derive from the massive construction

cores of platforms, walls and floor ballast which were significantly enlarged or newly built during this phase. The dramatic increase in the material dated to this phase, 10,107 diagnostic sherds, can be easily accounted for by the construction projects and occupation levels at the Acropolis, Las Palmitas and Group K (Table 5.2, Figure 5.4.)

The Caal ceramic complex has all the diagnostic features of the Uaxactun Tepeu II complex (Smith 1955, Smith and Gifford 1966). The domestic vessels of Cambio Unslipped (for example, Figure A.82, Figure A.83), Encanto Striated (Figure A.85) and Tinaja Red (for example, Figure A.72) dominate the assemblage. They account for about 81% of Caal ceramics; sherds of these three types from all Late and Terminal Classic contexts constitute about 86% of all diagnostic sherds from these same time periods, and 60% of the total of diagnostic sherds analysed. Such a vast number of sherds belonging to only three ceramic types suggests there was intense local production and consumption of these types of pottery (the majority of them of domestic nature with numerous forms) with a long-standing tradition spanning three chronological phases (Late Classic Mo' and Caal, and Terminal Classic Cucul), or ca. 400 years. Polychromes are also found in much larger amounts in the Caal phase than in other chronological complexes (with the exception of Mo'), and they constitute 10% of all Caal pottery. The Saxche-Palmar Orange Polychrome type dominates over Zacatal Cream polychromes. Forms of decoration other than painting are found with a frequency equal to the Early Classic period assemblages (2%).

The majority of the Caal material was recovered from the Acropolis. Late Classic Caal ceramics were found in every area of the Acropolis complex (with the exception of Plazuela 1 where the majority of potentially later material was eroded). The contexts dated to the Caal phase included the massive construction core of all of the main compound structures as well as the earliest construction contexts of Str. L7-20 in the

Northwest Courtyard and the construction core of Temple L7-11. All the evidence suggests that the compound underwent a major restructuring of its existing edifices along with construction of new buildings in its immediate vicinity. The Las Palmitas compound and the structures of Group K were also erected during the Caal phase and were likely a part of the same building project. The earliest construction cores of the main platform structures and Temple M3-1 at Las Palmitas contained large amounts of Caal ceramics with few earlier sherds mixed in. The excavations units located at the summits of the mounds of Group K revealed that the earliest levels contained almost exclusively Caal ceramics.

The amount of ceramic material dated to the Caal phase increased dramatically not only in comparison to the Mo' phase but also in comparison to all phases of the Early Classic period. The number of Caal ceramics is 3% higher than that of Chub, Saquij I and Saquij II combined.

Evidence from the Caal phase is the first sign that local pottery production and consumption at El Zotz was truly massive in scale. Chronologically Caal phase falls during the second reign of Tikal in the region (from ca. AD 695; Sharer and Traxler 2006, 390-393) and is associated with yet another shift in El Zotz alliance network. Similar to the period of prosperity in Saquij II, El Zotz thrived in the alliance with Tikal in the Caal period, as evidenced by craft and artistic growth.

5.2.5. Terminal Classic Cucul phase (AD 850 – 980)

The El Zotz Cucul phase corresponds to the Terminal Classic period in the Central Petén region. As recorded at multiple sites within the region, the Cucul phase was a period of decline and fundamental transformations; however, at El Zotz it is a period of further intense activity and consumption of goods at the central precinct and at Las

Palmitas. The amount of ceramics dated to the Cucul phase surpasses that of the Caal phase by 58%, which makes the Terminal Classic pottery assemblage the most abundant within the entire analysed collection (Table 5.2, Figure 5.5).

The Cucul ceramic complex is in many ways similar to the Caal complex in that many ceramic types continue to be produced and consumed largely unchanged between the two periods, especially the domestic and cooking wares. The three types dominating the Caal phase (Cambio Unslipped, Encanto Striated, and Tinaja Red; for example, Figure A.66 – Figure A.69, Figure A.84, Figure A.86) continue to overshadow other types (such as, Maquina Brown, Infierno Black, Azote Orange and polychrome types; for example, Figure A.54 – Figure A.59, Figure A.64, Figure A.75, Figure A.76) during Cucul phase, with an even greater proportion of diagnostic sherds classified as one of these three types (about 91%). Nonetheless, a number of new ceramic types and variations of the Late Classic categories appear at this time. These new variations allow for a distinction from the previous Caal phase. While the red monochromes continue to dominate the Terminal Classic slipped wares, they become more varied in their slip colour and texture. Tinaja Red remains the most abundant ceramic type; however, the variety of slips within this one ceramic type of the Cucul complex prompted me to introduce two new varieties to account for the differences in vessel appearance: Tinaja Red: var. Orange (with slip markedly more orange in hue than the Late Classic red yet different in intensity from the Azote Orange type, Figure A.70, Figure A.77, Figure A.78), and Tinaja Red: var. Waxy (with slip clearly waxy in feel, similar to the Preclassic as well as some of the Postclassic slips). Ceramics such as: Pasayo Orange-Brown, Altar Orange, or Tres Naciones Grey (Figure A.45, Figure A.46, Figure A.48) and other fine-pastes are types which first appear in Cucul contexts. The fine-paste pottery of Altar and Tres Naciones groups is one of the indicators of the Terminal

Classic period in the Petén as fine-paste vessels were largely distributed across Maya regions from the Usumacinta region during the Terminal Classic (del Pilar Jiménez Álvarez 2015). A number of local imitations appeared across many Lowland sites soon after the fine-paste vessels became widely distributed within the Lowland regions (for example Ting et al. 2015 23-25). The El Zotz assemblage includes both the imitations of fine-paste pottery as well as the original fine-paste vessels with intricate modelled decorations (for example, Figure A.44, Figure A.45, Figure A.47, Figure A.48).

Polychromes decrease in number considerably after the peak of their popularity in the Caal phase (for example, Figure A.39 – Figure A.43). The “disappearance”, or rather decline in the production of Late Classic-style polychromes, is another indicator of the Terminal Classic period. For a long time this somewhat drastic change in the composition of ceramic assemblages was interpreted as a decline in wealth of the elites. However, alternative techniques of decoration became prominent in the Terminal Classic, mainly the carving and use of moulds (Ting et al. 2015; Czapiewska 2011; Czapiewska 2012; Czapiewska-Halliday et al. in press). Large numbers of the Terminal Classic moulded-carved vessels exhibit a similar level of complexity of elements, motifs and configurations as the Late Classic painted vessels (Ting 2014; Ting et al. 2015; Graham 1987a; Helmke and Reents-Budet 2008).

The distribution of Cucul ceramics is far less uniform than the distribution of Caal material across the structures of the Acropolis, Las Palmitas and Group K. This was likely caused by the lack of large-scale construction projects, as in the Cucul phase construction diminished, was smaller in scale, and showed less evidence for co-ordinated supervision. The majority of the Cucul material at the Acropolis was recovered from special contexts on top of platforms and within chambers of buildings of Strs. L7-1, L7-5, L7-6, and from the Northwest Courtyard. The Cucul contexts

associated with the buildings of the Acropolis, located both inside and outside the rooms, were dense with all kinds of artefacts, including pottery sherds, obsidian, jade, stone tools, and animal bones (Pérez Robles et al. 2009; Marroquín et al. 2011; Newman 2015, 206-274). There was also evidence of burning, which in some instances occurred in situ, as suggested by the burning patterns on artefacts (Figure A.73, Figure A.74). These contexts were likely formed by deliberate action of aggregating the materials and artefacts accompanied by ritual activities which involved smashing of pots and burning episodes; thus, they most likely represent primary contexts of deposition. Such and similar contexts of material deposition and burning were found at other Maya sites, for example at Lamanai (Graham 2004, 236-239), Piedras Negras (Coe 1959, 94); Tikal (Coe 1990); Cerros (Garber 1981).

Over half of the Cucul ceramics from Las Palmitas originates from the rubbish pit located at the foot of the platform supporting the West Plaza structures (Strs. M3-6, M3-7, M3-8). The rubbish pit contained almost exclusively Terminal Classic ceramics with a small proportion of Early Postclassic pottery. This indicates that the excavated rubbish pit was started in the location during the Terminal Classic period and continued to have been used until the abandonment of the compound. Many of the ceramic sherds from the pit were larger in size than those found within construction core contexts. For the most part, they represent serving vessels of various sizes. The three dominant types of the Caal and Cucul phases (Cambio Unslipped, Encanto Striated and Tinaja Red) constitute an overwhelming majority of all ceramics found within the pit (76%).

The other Cucul contexts, especially from Group K and from the Northwest Courtyard, are far more likely to reflect the regular day-to-day activities taking place at these locations than the deposition contexts found inside the rooms on the Acropolis structures. Most of the Cucul contexts at Group K and the Northwest Courtyard were

relatively uniform layers of deposits inside and outside of the small buildings. At the Northwest Courtyard, Cucul phase pottery is the most abundant and its presence suggests that the occupation of this small compound continued throughout the Terminal Classic period. The presence of Early Postclassic sherds on top of the Terminal Classic deposits further suggests people were living in the Northwest Courtyard at least at the beginning of the Postclassic era. The quantity of Cucul phase pottery at Group K, while still significant, decreased compared to the quantity of Caal pottery. Early Postclassic material is extremely scarce, amounting to only eleven sherds in total at Group K. This chronological evidence implies that Group K was likely abandoned during the Terminal Classic period, before the abandonment of Northwest Courtyard or Las Palmitas.

The discovery and excavation of the special deposits – the Acropolis deposit and the Las Palmitas rubbish pit – explains why such a large proportion of ceramic material was dated to a time period which was considered to be a time of decline and cultural decadence in the Petén region. The richness of these two deposits and a lack of large scale co-ordinated construction events help to explain the fact that as much as 53% of the analysed Cucul material originated from these two special deposits found at the Acropolis and Las Palmitas.

Regional political events seem to have affected El Zotz in two ways in the Terminal Classic. First, a new wave of rituals and intensified social behaviour, such as ritual filling of rooms within the Acropolis buildings and feasting at Las Palmitas evidenced by the ceramic remains, was likely sparked by the newly found independence from Tikal, whose power over the region was dwindling at this point (Martin and Grube 2000, 51). On the other hand, the local authority groups did not seem capable of, or perhaps interested in, commanding enough resources and labour to co-ordinate and complete large-scale construction projects. This reinforces the argument that alliances

with the big powers of the Central Maya Lowlands were crucial for El Zotz royal and elite authority and the urban development of the polity. Perhaps the ritual and social events occurring at the elite compounds during the Terminal Classic were a form of propaganda to maintain the control over the polity in the wake of political transformations happening elsewhere in Petén. However, while the local elites tried to establish their new sovereignty, it appears they ultimately lacked the authority to overcome the regional political shift. Alternatively, there might have been a change in the authority figures at the site and new elites might have come to power during the Terminal Classic period.

5.2.6. Early Postclassic Choc phase (AD 980 – 1250)

El Zotz Choc phase reflects the Early Postclassic transformations in the activities and material culture detected at the site as well as in the region (see Table 5.2 and Figure 5.6 for distribution patterns of Choc ceramics). Some fundamental changes were already recorded for the preceding Cucul phase, or the Terminal Classic, and further changes are visible within the contexts dated to the Postclassic period.

The Choc ceramic complex is similar to other Early Postclassic complexes of the Petén region (such as – Caban and Eznab in Tikal [Culbert 1993] or Itz in Nakum [Hermes 2012]) and the ceramic types typically attributed to this time period differ in many ways from the previous Classic-style pottery. New red monochromes appear or become more prominent in the Choc contexts: Augustine Red, characterised by red or red-orange slip on bright orange paste, and Paxcaman red, characterised by red (often waxy) slip on paste containing shell temper. A small number of Postclassic Pozo Unslipped type is also found in the Choc assemblage. New forms and shapes indicative of the Postclassic time period, such as scroll supports, likewise appear in the analysed sample. All these typical Postclassic ceramic types and forms found within the assemblages from the five

selected El Zotz complexes constitute almost the entirety of the ceramics dated to Choc phase (99%). The contexts associated with Early Postclassic ceramics at El Zotz mainly involve humic and sub-humic levels, unsealed contexts which are prone to erosion and disturbance (Graham 1985, 215) and where material is often mixed and can reflect multiple chronological phases. It has been suggested that many of the domestic wares of the Late and Terminal Classic, such as Cambio Unslipped or Encanto Striated, might have been produced into the Postclassic period at El Zotz (Kinsley and Gámez in press). Hence, their dating proves to be more problematic than the dating of the slipped and decorated vessels. Some of the domestic wares found in the surface deposits could have in fact belonged to the Choc phase, which would make the Postclassic ceramic assemblage more varied. The probable long-standing tradition of the production of the domestic unslipped and striated wares and the mixture of ceramic complexes found in the Postclassic contexts make it virtually impossible to date the domestic, utilitarian types reliably to a specific chronological phase, unless time-specific attributes are present. These indeterminate ceramic types were, for the most part, left out of the diagnostic pottery assemblage in the current analysis.

In the Acropolis area, the majority of Choc material is concentrated in the Northwest Courtyard (83% of the Acropolis Postclassic assemblage). The ceramics are found in contexts directly overlying Cucul contexts, which suggests a continuous occupation of the small structures into the Early Postclassic period. Excavations of the grand, neighbouring structures of the Acropolis palace recovered only small amounts of scattered Choc pottery within the surface deposits. No evidence was found to suggest any occupation or much activity was taking place at the Acropolis main masonry buildings after the ritual events of the Terminal Classic period. Similarly, the eleven

Choc sherds found at Group K indicate that the occupation of these small structures ceased at the onset of the Early Postclassic.

At Las Palmitas, the Postclassic pottery has a slightly more uniform distribution across structures, although the majority of the material (85%) was recovered from three structures surrounding the main plaza (Strs. M3-5, M3-7, and M3-9) and from the rubbish pit. Evidence suggests that the Las Palmitas complex was occupied continuously into the Early Postclassic period, mainly because of the rubbish deposits found directly on top of, and mixed with, the Terminal Classic Cucul material. The activities which led to the formation of the rubbish pit deposit continued into the Early Postclassic. However, the relatively small amounts of Choc ceramics indicates that Postclassic occupation was probably fairly short-lived and the complex was likely abandoned well before the proposed end date of the Choc phase at El Zotz (AD 1250). The Northwest Courtyard structures near the Acropolis were also probably abandoned soon after the onset of the Postclassic era.

Domestic pottery and other utilitarian objects continued to be produced and consumed largely unchanged regardless of the socio-political changes taking place at El Zotz and in the region. However, there is very little evidence for elite investment in labour and production of luxury or prestige goods (Kingsley and Gámez in press). Most of the Choc assemblage shows very little potential for class differentiation. Indications are that elites at El Zotz ceased to function in the same ways they did during the Classic era and that their control or authority was manifested differently. It is also possible that elites ceased to occupy El Zotz altogether.

Choc phase ceramics of the Early Postclassic represent the latest dated material culture associated with occupation floors of structures found at the investigated El Zotz

complexes. Two Colonial period vessels, left as a cache offering by the Lacandon Maya (radiocarbon date of AD 1426-1524; Laboratory number: Beta-250882, Table B.1), were found inside one of the rooms at Temple L7-11 at the Acropolis. This very late cache is not related to an occupation of the site, but rather suggests that El Zotz was a destination for pilgrims long after the city was abandoned.

5.3. Chronological patterns at El Zotz

The results of the chronological analysis across all chronological phases illustrate two distinct stages of growth, florescence and decline. Both of these stages can be linked to the history of El Zotz within the region of Petén. The first florescence occurred during the Saquij II phase of the Early Classic period and was followed by a slight decline at the beginning of the Mo' phase. The second-stage florescence is dated to the Caal and Cucul phases, followed by decline during the Choc phase of the Postclassic period.

The Late Preclassic and Early Classic periods mark the first significant construction and ritual events to take place at three of the analysed complexes of El Zotz. The three locations were first occupied in the Chub and Saquij I phases, as numerous contexts dated to these periods were found directly above bedrock. These early contexts reflect the beginnings of occupation of the hilltop complexes as well as the central precinct of El Zotz. At all of these locations, El Diablo, El Tejón and the Acropolis, the amount of ceramic material increased considerably throughout the Early Classic. At both El Diablo and the Acropolis there was almost three times as much ceramic material dated to the Saquij II as was dated to the Chub and Saquij I phases combined, and over three times as much Saquij II than Saquij I ceramics at El Tejón. Thus, the Saquij II phase was a time of florescence in the Early Classic. At this moment in history, El Zotz was allied with Tikal. Large amounts of Saquij II pottery were recovered from construction cores and also from the deposits filling the interiors of Early Classic buildings. The rooms of

buildings at El Diablo and El Tejón were filled before abandonment at the end of the Early Classic, while new platforms and superstructures were built on top of the earlier platforms at the Acropolis. Therefore, the increase in the ceramic material dated to Saquij II and the context of its deposition signify both the economic prosperity of the Early Classic, as well as significant transformations of socio-political dynamics at El Zotz.

The decline in the amounts of recovered material culture dated to the Mo' phase demonstrates the first sign of dwindling activities taking place and concludes the first period of growth of the El Zotz polity. Although other areas at El Zotz were being developed into new urban spaces (for instance, the East Group or Plaza of the Five Temples) the occupation at the beginning of the Late Classic period at the analysed core zones is only modestly visible through a number of smaller-scale construction events at the Acropolis. These events yielded significantly less ceramic material than the previous Saquij II phase. Very little Mo' pottery was found at other analysed complexes, with only three sherds from El Diablo being clearly diagnostic of this phase. What looks like a decline in production and consumption of material culture actually probably reflects the consequences of political transformation in the region (Calakmul defeating Tikal, an ally of El Zotz) and at El Zotz (changing alliance networks) following the end of the Early Classic period. The Mo' phase is a significant time in El Zotz history as it indicates a shift in the locations of elite housing and ritual or administrative buildings: from El Diablo, El Tejón and Acropolis during the Early Classic to the Acropolis, Las Palmitas and other groups in the central precinct (including Group K) during the Late Classic period.

The subsequent Caal phase shows by far the largest increase in ceramic material, recovered from three of the El Zotz selected compounds. These locations – the

Acropolis area, Las Palmitas, and Group K – continued to be inhabited until the Postclassic period. Caal phase marks the beginning of the second florescence of the El Zotz polity after the Early Classic period. The amount of Acropolis ceramics dated to the Caal phase is 344% higher than the ceramics dating to the Mo' phase, and 140% higher than the Saquij II phase. This surge in recovery of ceramics of the Caal phase was influenced mainly by the monumental construction projects carried out in the central precinct of El Zotz as well as at Las Palmitas. Caal construction core material, which was encountered in the vast majority of the excavated units in the Acropolis area, the central precinct, and at Las Palmitas, not only contained large amounts of ceramics but was also dense with other material culture and refuse. These Caal constructions of numerous new structures followed yet another reversal in regional politics when El Zotz realigned itself with Tikal's sphere of influence. There must have been steep population growth at the site and substantial rise in production and consumption of goods. Such significant growth in El Zotz's population size would have certainly led to intensified craft production, an increase in craft specialisation, and broadening of exchange systems, all in order to support the needs of a fast-growing and diversifying population.

The quantity of pottery remains continued to increase in the Cucul phase, or the Terminal Classic period. The Terminal Classic has been described as a period of transformation in the Central Petén region (for example Sharer and Traxler 2006, 500-505; Demarest et al. 2004; Braswell et al. 2004; Valdés and Fahsen 2004; Żrałka and Hermes 2012; Newman et al. in press; Newman 2015), and at El Zotz it yielded more material for analysis than any other chronological phase. This trend, however, has to be viewed through the characteristics of contexts dated to the Cucul phase. At the Acropolis, the majority of Cucul contexts are thought to have been formed through ritual activities. These activities created deposits which filled the existing

superstructures of the Acropolis' largest buildings. Rituals were carried out possibly in preparation for further construction events, which were, however, never completed. At Las Palmitas, on the other hand, the majority of Cucul ceramics derived from rich rubbish pits discovered on the edge of the palace platform. Both of these types of contexts tended to be dense with ceramic and other material culture and, additionally, tended to preserve the artefacts relatively well. In both cases there was little disturbance to the Cucul contexts and many of the pottery sherds were larger in size than the earlier specimens. The volume of ceramics dated to the Terminal Classic period shows there was still large-scale ceramic production and consumption at El Zotz, contrary to the perceived economic and political decline at some of the sites in the region (such as Tikal, Calakmul, Uaxactun or Naranjo mentioned earlier).

The Choc phase, or the Early Postclassic period, shows a significant decline in the numbers of recovered pottery fragments. The ceramics mostly originated from surface contexts rather than distinct construction events or occupation floors. After the Terminal Classic large-scale ceramic deposits, the Postclassic material from the five analysed complexes was found scattered, fragmented and heavily eroded. It points to a relatively modest occupation or to occupation with perishable structures, where debris is not preserved as well as in the masonry contexts of the Classic period. This pattern falls in line with the historical events of the Early Postclassic period in the Central Maya Lowlands. The amounts of Choc phase ceramics recovered from the Acropolis constitute merely 0.97% of the diagnostic Acropolis assemblage, and only 3.38% of the Las Palmitas diagnostic assemblage. Even though some of the ceramic types dominate the middle of the Postclassic period at other Maya sites, it is considered that types such as Pozo Unslipped and Paxcaman Red mark the Early Postclassic period at El Zotz (Kingsley and Gámez in press). Fluctuations of production and consumption of goods at

El Zotz were observed all throughout the history of the site, but the Early Postclassic phase marks the final decline in the site's occupation.

There are stark differences in the amounts of recovered ceramic material not only between chronological phases but also between complexes and structures. The most substantial difference lies between the amounts of diagnostic sherds found at the Acropolis area (25,076 sherds) and all of the other complexes (13,030 sherds). The number of diagnostic sherds found at the Acropolis is approximately twice that found at all other complexes combined. The size of architectural complex, number of construction events, longevity of occupation of structures as well as the excavation strategies of different locations around El Zotz can all account for these variations.

Table 5.2 Count of sherds from the five selected complexes at El Zotz dated to the local chronological phases.

Complex	Structure/Area	Time period							Grand total
		Chub	Saqui I	Saqui II	Mo'	Caal	Cucul	Choc	
El Diablo	F8-1	4	263	490					757
	F8-2	2	92	121					215
	F8-4	3	66	92					161
	F8-5	1	17	37					55
	F8-7	3	7	335	1				346
	Diablo Looters' tunnels		27						27
	Diablo rubbish pit		20						20
	Diablo Main plaza	1	203	267					471
	F8-12	9	31	63					103
	F8-13	1	49	10					60
	F8-8	1	33	403	1				438
	F8-15			340					340

Complex	Structure/Area	Time period							Grand total
		Chub	Saqui I	Saqui II	Mo'	Caal	Cucul	Choc	
	F8-16			151					151
	F8-17			65	1				66
	Total	25	808	2,374	3	0	0	0	3,210
El Tejón	G6-1			268					268
	H6-2		84	14					98
	North Courtyard, Stairway		2	7					9
	Total	0	86	289	0	0	0	0	375
Acropolis	L7-11	2		1		895			898
	L7-1	4		207	1,448	1,715	3,797	26	7,197
	L7-2			255	59	131	49	7	501
	L7-3		917	1,772	1	1	79		2,770
	L7-6	40	347	1,333	146	939	187	3	2,995
	L7-5	6		65	108	635	1,911	3	2,728
	Courtyard 1			235					235
	Courtyard 2	1		3		6			10
	L7-7			36		158		1	195
Northwest Courtyard	L7-17	3		7		66	1,713	50	1,839
	L7-20			41		1,482	2,408	97	4,028
	Northwest Courtyard Platform	4	578	363		28	652	55	1,680
Acropolis Area	Total	60	1,842	4,318	1,762	6,056	10,796	242	25,076
Las Palmitas	M3-1					266	5	10	281
	M3-2					9		3	12
	M3-3					56		1	57
	M3-5					55	521	28	604
	M3-6			2		425	5	4	436
	M3-7					291	181	20	492
	M3-9			1		616	815	46	1,478
	M3-11					74	1		75
	Palmitas West Courtyard	4		4		205	9	1	223
	Palmitas rubbish pit						2,550	114	2,664
	Palmitas Looters' tunnels	1		1		563	8		573

Complex	Structure/Area	Time period							Grand total
		Chub	Saquij I	Saquij II	Mo'	Caal	Cucul	Choc	
	Palmitas East Plaza					19			19
	M3-4					119	26	16	161
	M3-8					52	12	1	65
	M3-15, rubbish pit					68			68
	South Platform					8			8
	Surface collection					5			5
	Total	5	0	8	0	2,831	4,133	244	7,221
Group K	K8-3					355	250	2	607
	K8-8			2		512	573	4	1,091
	West Courtyard					353	168	5	526
	Total	0	0	2	0	1,220	991	11	2,224
Grand Total		90	2,736	6,991	1,765	10,107	15,920	497	38,106

5.4. Chronology and further ceramic analysis

The analysis of chronological patterns outlined in this chapter highlights several constraints which the available temporal data put on further ceramic analysis. Because of the very small numbers of sherds dated to the Preclassic period, Chub and Saquij I pottery are analysed as one chronological phase. There are only 90 diagnostic Chub phase sherds, which constitute 0.24% of all diagnostic assemblages. Such a small proportion means that the Preclassic sample is highly unlikely to produce reliable results in the comparative analysis with other, better represented, time periods. Moreover, it is mostly found in contexts alongside Saquij I pottery, and combining the two phases is a logical solution to the sample size issue.

Material dated to the Early Postclassic period, or Choc phase, is, however excluded from most of the statistical analysis. It constitutes merely 1.3% of the diagnostic ceramic assemblage yet it cannot be suitably combined with another time period since in many ways it shows significant changes in socio-economic and cultural behaviour.

Mo' phase material was found almost exclusively at the Acropolis palace structures and, thus, cannot be used in any comparative analysis involving other complexes. Mo' phase ceramics only have the potential to contribute towards the comparative analysis of the Acropolis assemblage through time.

The Acropolis is a unique complex within the selected sample of all five architectural compounds in that it is the only compound which shows signs of continuous occupation through all of the recorded chronological phases from Late Preclassic to the Early Postclassic period. All of the other four compounds were occupied only during two or three phases, either during the early El Zotz florescence (Early Classic) or during the late El Zotz florescence (Late and Terminal Classic). Therefore, the analysis of El Zotz economic and socio-political dynamics can always involve only three complexes at any one time. El Diablo, El Tejón and the Acropolis provide data for the Early Classic, while Las Palmitas, Group K and the Acropolis provide data for the later time periods.

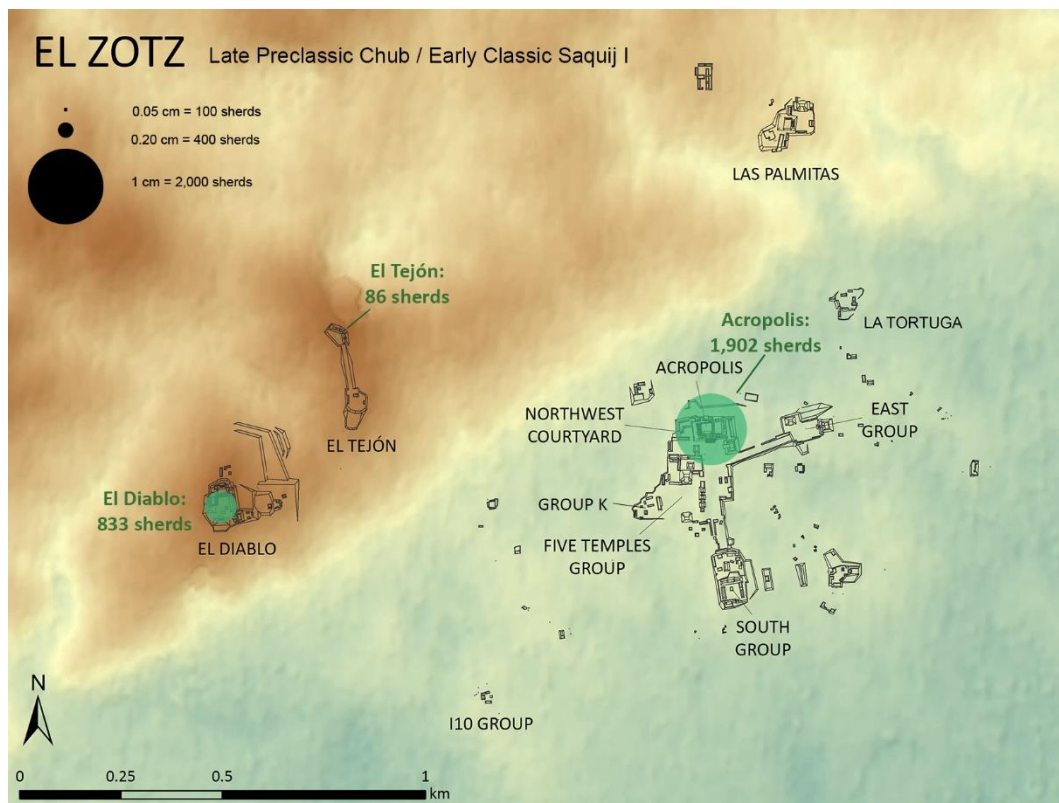


Figure 5.1 Distribution of excavated ceramic material dated to Late Preclassic Chub / Early Classic Saquij I phase across El Zotz complexes. (Map by T. Garrison, edited by the author)

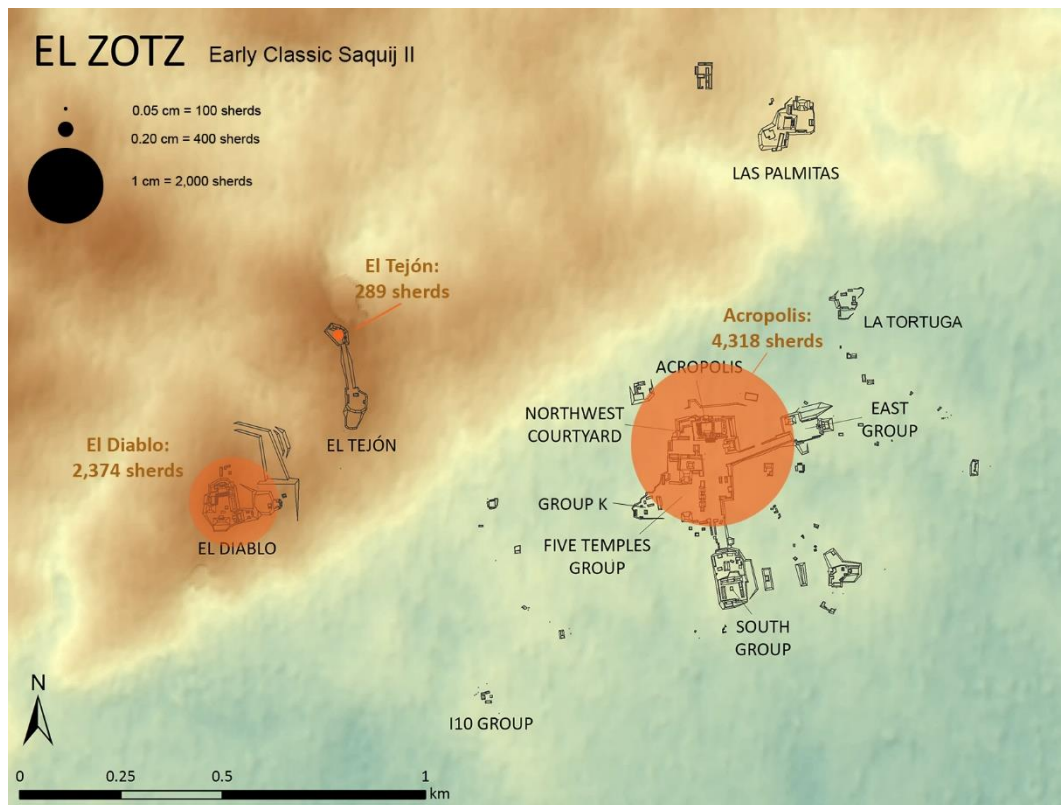


Figure 5.2 Distribution of excavated ceramic material dated to Early Classic Saquij II phase across El Zotz complexes. (Map by T. Garrison, edited by the author)

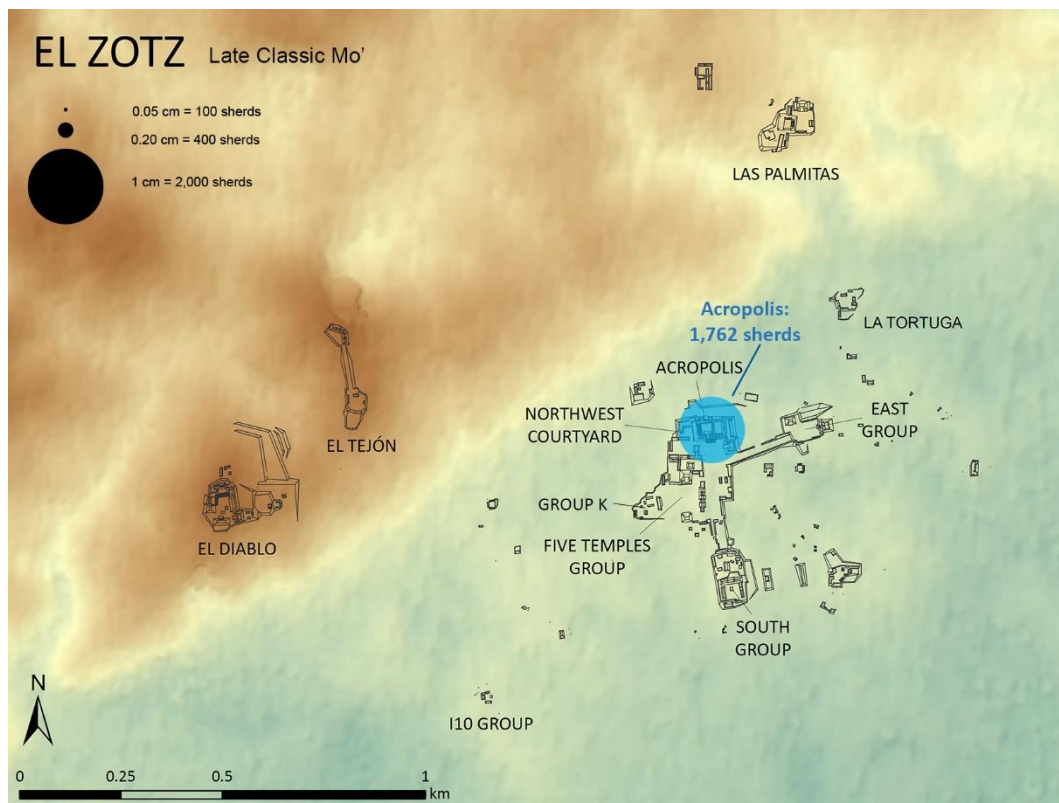


Figure 5.3 Distribution of excavated ceramic material dated to Late Classic Mo' phase across El Zotz complexes. (Map by T. Garrison, edited by the author)

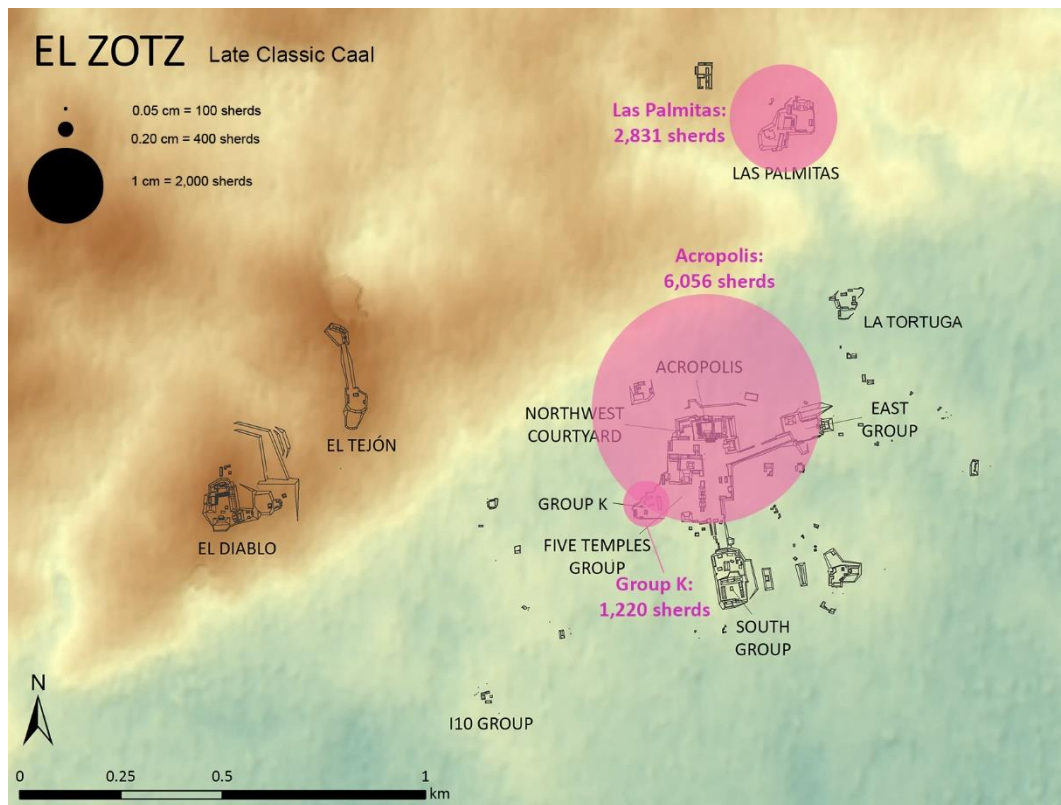


Figure 5.4 Distribution of excavated ceramic material dated to Late Classic Caal phase across El Zotz complexes. (Map by T. Garrison, edited by the author)

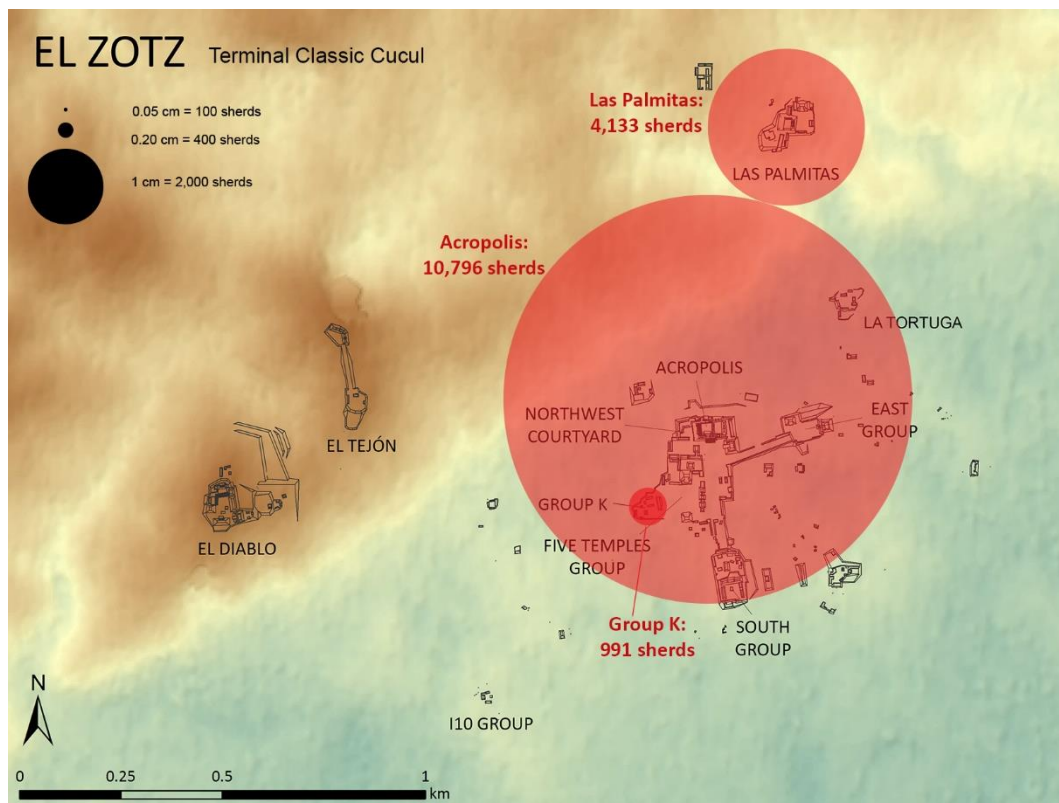


Figure 5.5 Distribution of excavated ceramic material dated to Terminal Classic Cucul phase across El Zotz complexes. (Map by T. Garrison, edited by the author)

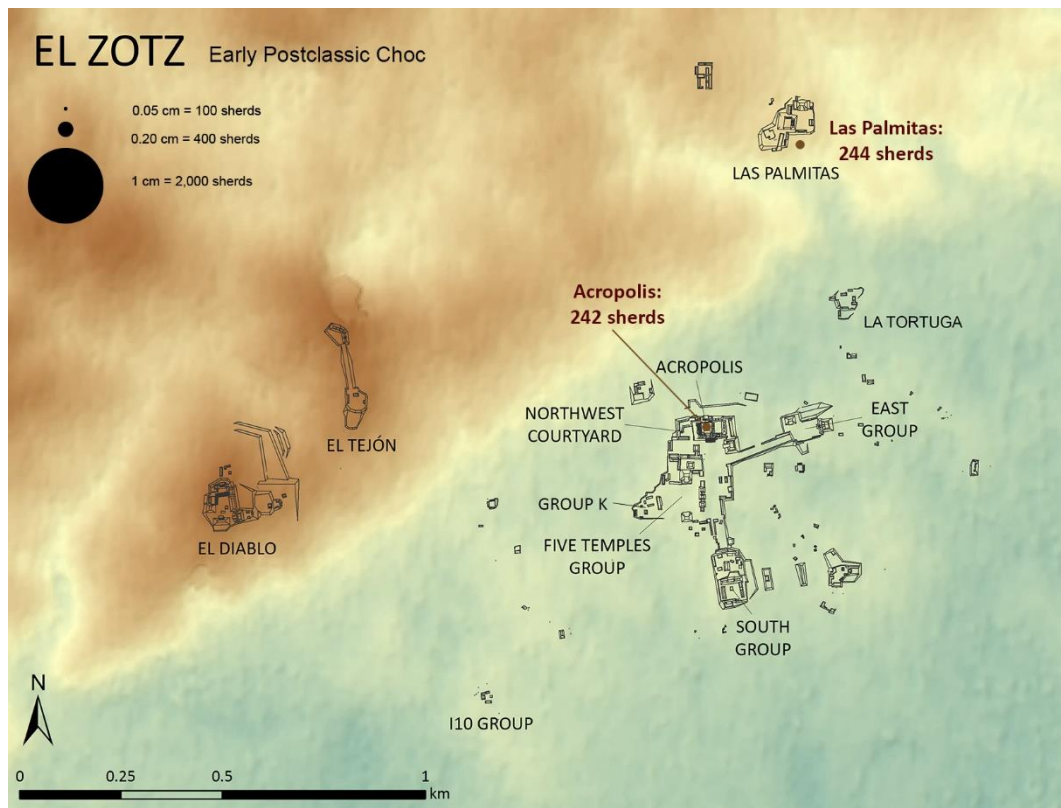


Figure 5.6 Distribution of excavated ceramic material dated to Early Postclassic Choc phase across El Zotz complexes. (Map by T. Garrison, edited by the author)

CHAPTER 6. Spatial and Structural Configuration at El

Zotz

The analysis of the chronological sequence revealed the temporal relationships among the investigated complexes at El Zotz. I will now delineate how these complexes relate to each other and other areas of El Zotz within the natural and urban spaces of the city. I will outline how the spaces of each complex were organised, maintained and transformed through time to establish the geographical dimensions of the compounds. All of the architectural and stratigraphic information is compiled from the excavation reports written by the members of El Zotz Archaeological Project: Meléndez 2008, Arredondo Leíva et al. 2008, Gillot Vassaux 2008a; Gillot Vassaux 2008b, Pérez Robles et al. 2009, Quiroa Flores 2009, Román and Carter 2009, Marroquín et al. 2011, Carter and Gutiérrez 2011, Román and Newman 2011, Aragón 2011, Carter and Gutiérrez 2012, Beltrán and Román 2012, Newman and Menéndez 2012, Piedrasanta 2012.

6.1. Location of El Zotz complexes

Defining the characteristics of locations of the El Zotz complexes is significant for understanding the relationships among them and their potential importance for the inhabiting populations based on the benefits of the natural terrain. As mentioned in a previous chapter (Chapter 3) El Zotz is located on the northern edge of Buenavista Valley which runs east-west through the upland areas of the biotope San Miguel La Palotada. The natural terrain of the valley and the surrounding uplands created a number of water sources (as discussed previously) and allowed for widespread urban settlement at a variety of elevations. Various El Zotz complexes were constructed in a number of areas which, at least at the beginning of El Zotz history, were not nucleated around a

single elite precinct. The surrounding hills were continuously inhabited by the people of El Zotz during the Classic period (from ca. AD 250 to ca. AD 980) and possibly longer into the Postclassic. The hilltop complexes were constructed at a distance from the valley settlements and in many ways seemed to have been separated from them – the hilltop settlements had their own water sources, their own set of specialised buildings, and their own peripheral, probably residential, areas. However, it is unlikely they were completely self-sufficient in terms of food and craft production, and they were connected with the valley complexes by well-defined walkways. With time, a core of the site emerged after an increasing amount of construction works concentrated in one area of the site, referred to as the “central precinct”, or the urban site core, in the lower-ground El Zotz.

The **Acropolis** palace, Temple L7-11, and the Northwest Courtyard are located in the urban core area of the site, the central precinct, at its northern extremity (Figure 1.1). The entire precinct lies at the foot of a hill in the Buenavista Valley; this location gave it the advantage of access to, and perhaps control over, one of the major trade routes of the region through the valley. The Acropolis structures are among the largest and tallest edifices at El Zotz, clearly visible from the plazas and gathering points at the city centre. To the south of the Acropolis lies a vast open space, the *Plaza Principal* – a gathering and display area for stelae. The Acropolis lies within the proximity of other monumental architecture, which suggests that it formed part of the civic-ceremonial centre of El Zotz. The civic-ceremonial centre also likely included the East Group, Plaza Principal, Plaza of the Five Temples and associated structures. The location of the Acropolis at the junction of two major causeways suggests that the occupants had the potential to control the flow of people and goods into and out of the city centre.

Group K is another complex located in the flat lands at the base of the hills, within the vicinity of the central precinct and likely forming a part of it. This complex, relatively modest in size of its buildings in comparison to the nearby structures (Strs. L8-8, L8-9, L8-10, L8-11, L8-12), is thought to represent the western residential area of El Zotz. It is located immediately East of the main water reservoir at El Zotz and is associated with the West Plaza. Even though it is thought to be a more modest occupation area, it is located close to the main Plazas of El Zotz and, therefore, was probably directly involved in the major activities taking place in the core of the city. It is possible this group played a managerial role in maintaining the principal Aguada of El Zotz.

The **El Diablo** complex was constructed on the peak of one of the highest hills of the Petén region (1,109 meters above sea level) and approximately 1 km west from the centre of El Zotz (Figure 1.1). A separate water reservoir was discovered just outside the El Diablo complex – a necessity due to the distance of the complex from the main water reservoir in the urban core. Thanks to the elevation of the El Diablo complex, the major pyramids of Tikal are visible above the canopy on the other side of the valley. Thus, El Diablo's location had a clear advantage for observing the valley floor and the neighbouring city of Tikal. This was especially important during the Early Classic period, when El Diablo was constructed and occupied, because of the political changes in the region, the emergence of new Maya states and the growing power of Tikal. El Diablo's elevated position created a natural inhibitor to access the site and was a natural defence strategy in an uncertain political climate. There were a limited number of walkways leading to the compound (some of which may still be undiscovered); thus, access to El Diablo, and the circulation of people and goods in and out of the complex, were probably strongly monitored. The distance from the central precinct below, and from any other urban settlement, provided the inhabitants of El Diablo with high levels

of privacy, protection from potential attacks, and even separation from other El Zotz population groups.

El Tejón was constructed along the same ridge of hills as El Diablo, at a similar altitude, 400 meters to the northeast. El Tejón is likewise located at a significant distance to the west of the core of El Zotz (about 800 meters); as a result, it probably had strong links with El Diablo situated nearby. The structures of El Tejón are much more modest in size and architectural complexity than those of El Diablo, yet the location of this small compound gives it an equally strategic vantage point from which, like El Diablo, it is possible to see the valley floor and monitor access points into the complex. Also like El Diablo, its hilltop position and its remove from the rest of the urban settlement made El Tejón a private, secluded and defensible group.

Las Palmitas, known as the North Group, is situated on top of a hill artificially levelled by the ancient inhabitants. Las Palmitas sits at a lower elevation than El Diablo but is similarly distanced from the city core (by about 700 meters). The location of Las Palmitas gives it an even broader viewshed than that of the Acropolis and thus the potential to have monitored the movement of people and goods in and out of the valley of the El Zotz polity. The hilltop location served as a natural access barrier and clearly separated the complex from the expanding central precinct during the Late Classic period. However, unlike the two Early Classic hilltop complexes of El Diablo and El Tejón, there were several potential access points into Las Palmitas. The smaller residential complex of La Tortuga is located at the foot of the hill on which Las Palmitas was constructed, along a walkway roughly halfway between Las Palmitas and the central precinct. La Tortuga possibly housed people drawn to the location by the presence of the larger complex and the attendant foot traffic in the area.

Maps presented further below and showing the distribution of ceramics across all five of the selected complexes are coupled with the results of the chronological analysis of ceramic remains (Figure 6.1 – Figure 6.7). They illustrate the transition in occupation of El Zotz compounds through time.

The maps illustrate how the occupation shifted from the western hilltops (El Diablo and El Tejón) in the Early Classic to the northern hilltops (Las Palmitas). The central precinct, which includes the Acropolis, Group K and other neighbouring compounds not analysed in the current research (such as the East group, South Group and Plaza of the Five Temples) was occupied throughout all of El Zotz's history, although various compounds were constructed and abandoned, and even re-occupied, at different times. The central precinct of El Zotz was steadily developed into the core of the city through time. The earliest El Zotz occupation was found at the South Group and the entire precinct grew in size throughout the Classic era. Thus, the urban core of El Zotz as a whole reflects continuity of occupation, the Acropolis being one of very few areas continuously occupied through all of the Classic period (Figure 6.1, Figure 6.2, Figure 6.3), while the hilltop complexes present much shorter histories and disruptions in occupation (Figure 6.4, Figure 6.5, Figure 6.6).

6.2. Structure and building types at El Zotz complexes

Certain complexes at El Zotz share similar features of location as well as longevity of occupation. El Diablo and El Tejón were both constructed on hilltops located to the west of the core of El Zotz and they were both occupied during Early Classic Saquij I and Saquij II phases (ca. AD 250 - 550). Both Group K and Las Palmitas were constructed during the Late Classic Caal phase and were occupied into the beginnings of Postclassic Choc phase. These apparent similarities among the complexes do not,

however, consider the differences in internal structure compositions or the ways their internal dynamics changed through time.

The analysis of structural configurations, or relationships among structures within complexes, aims to provide information about the histories of each compound. The analysis will first specify what types of structures were found in each complex and then how the structures were transformed through time. Each category of analysed structures will account for the structures and features which were recorded in the archaeological plans of the site. The more detailed investigation into the structural patterns will additionally take into account the presence of any special features, such as tomb chambers, caches, burials, building ornamentation and the like, which are all useful when stipulating the possible functions of individual buildings.

6.2.1. Structure Types: Definitions

For the purpose of the current structural analysis I have distinguished five types of architectural structures and features found across the five selected complexes at El Zotz. Because the same architectural features are found across numerous sites in the Maya area, these types are not unique to El Zotz and can be used for comparison with other Maya sites.

One of the five structural categories subsumes *patios*, *courtyards* and *plazas*. It is the only category which does not refer to a “building type” and rather indicates the presence or absence of spaces enclosed within the complex. Such spaces were important for the ancient Maya (as mentioned in Chapter 2) and are typical of Maya architectural compounds, regardless of their size (Inomata 2006, 819; Loten and Pendergast 1984, 7, 11; Parmington 2011, 13). Patios, courtyards and plazas are all spaces enclosed on four or sometimes three sides by standing architecture. They normally provide the common

entrance area for the surrounding structures, and the doorways of the buildings open onto the space, whether patio, courtyard or plaza. Patios are here documented as open spaces normally associated with residential architecture and are relatively small. Courtyards are bigger than patios and are enclosed by structures belonging to a single compound; the structures bordering courtyards often impinge on each other, thus limiting access into the open space. Plazas are the biggest of the open spaces that normally characterise public spaces; plazas can be bordered by structures from different compounds (Loten and Pendergast 1984, 11).

The remaining four categories classify the structures on the basis of size, the extent of masonry architecture, spatial relationships with neighbouring edifices, and locations within the complexes. The first category refers to the *main masonry structures, multiple-terraced platform structures and possible palace buildings*. All the buildings in this category are supported by terraced platforms; they have full or partial masonry walls as opposed to walls of perishable materials; they are often arranged around courtyards or plazas; they form the focal point of the architecture within complexes – the “complex core”; and they were most likely used for a wide variety of purposes including domestic and administrative (D’Arcy Harrison 2003, 116; McAnany 2010, 178; Inomata 2003, 49-51).

Complex core is here defined as an area around the main masonry structures within an architectural group; areas outside the complex core are here considered complex peripheries. Complex core is characterised by significant amounts of construction work invested in its masonry and was an area where the activities of complex’s inhabitants likely concentrated. In contrast, peripheries are characterised by smaller-scale architecture, lower density of structures, and likely experienced less foot traffic than the complex core (Palka 2003, 125; Abrams 1994, 22-24; Garrison and Kwoka 2012).

Another structural category includes *small platform structures located within the complex core*. These structures are small relative to the main masonry buildings and they are often constructed on masonry platforms but bear no evidence of masonry superstructures. They can be located within the open spaces of the compounds or they can enclose the courtyards or plazas along with the main masonry structures.

Small platform structures located on the peripheries of complexes are recorded as another structural category. This category distinguishes the structures based mainly on their location relative to the complex core with which they are associated. These structures consist of small platforms (relative to the main masonry buildings) with no evidence of masonry superstructures, and are located outside of the complex core – outside of the principal open space of the complex. The main masonry buildings and the smaller buildings within the complex core tend to face away from the structures in the peripheries. The peripheral buildings might even be constructed on a separate platform or levelled area located in the vicinity of the complex core but visibly outside of it. They might also be arranged around their own patios which are often smaller and less restricted than the spaces enclosed by the main masonry buildings.

Temples are the last structural category and are identified based on a slightly different set of characteristics than the other classes of buildings. Temples have many of the main masonry and palace structural features, such as terraced platforms, masonry superstructures and location facing the main courtyards or plazas (Kowalski 2003, 204; Schele and Mathews 1998, 29). However, they often stand visibly separate from the nearby residential and administrative structures; their platforms are often square-shaped rather than rectangular; and they have at least one tomb chamber within the platform core (Christie 2003, 3; Demarest 2004, 96). The tomb chambers housed the remains of members of royal or high elite lineages. Thus, as places dedicated to the ancestors and

deities, temples were the focus of ritual and religious activities. This, of course, does not mean that other structures were not used for religious worship or ritual events; however, temples repeatedly exhibit different and unique characteristics relative to their neighbouring structures (be it the size, the shape or the façade decoration). For this reason, it is crucial to identify the temple structures within architectural complexes as they most likely signalled symbolic or historical significance of the area for the wider population of the site.

Each recorded structure and feature within each of the five selected complexes was evaluated according to the above definitions and classified into one of the five structural categories. The results of this analysis are presented in Table 6.1. These results are based on the latest construction and occupation phase of each complex and on the remains mapped and excavated by the El Zotz Archaeological Project.

Table 6.1 Structure types of the selected complexes at El Zotz.

Type of structures	Acropolis	Las Palmitas	El Diablo	El Tejón	Group K
Temples	L7-11	M3-1	F8-1	--	--
Main masonry structures, multi-terraced platform structures, possible palace buildings	L7-1	M3-2	F8-2	--	--
	L7-2	M3-3	F8-3		
	L7-3	M3-6	F8-4		
	L7-4	M3-7	F8-5		
	L7-6	M3-10	F8-6		
	L7-8		F8-7		
	L7-9		F8-8		
	L7-10		F8-9		
	L7-21		F8-10		
	L7-22				
	L7-23				
	L7-24				
Patios, plazas, courtyards	<i>Plaza Principal</i>	West Courtyard	Main plaza	North Courtyard	East Courtyard
	L7-5 (Restricted Patio)	East Plaza	East Courtyard	South Courtyard	West Courtyard

Type of structures	Acropolis	Las Palmitas	El Diablo	El Tejón	Group K
	Courtyard 1		North Courtyard		
	Courtyard 2		Central Courtyard		
	Courtyard 3				
Small platform structures within complex core	L7-7	M3-4	F8-11	G6-1	K8-2
		M3-5	F8-12	G6-2	K8-3
		M3-8	F8-13	H6-1	K8-4
		M3-9	F8-14	H6-2	K8-5
		M3-11	F8-18		K8-6
					K8-7
					K8-8
					K8-9
Small platform structures on peripheries of complexes	L7-17	M3-12	F8-15	H7-1	
	L7-18	M3-13	F8-16	H7-2	
	L7-19	M3-14	F8-17	H7-3	
	L7-20	M3-15	G8-1		
		M4-1	G8-2		
		South Platform	G8-3		
			G8-3		
			G8-4		
			G8-5		

Table 6.1 shows the first glance into the basic structural compositions of the analysed complexes. It is clear that the number of structures is not necessarily representative of the size of the complex as the structures differ in architectural monumentality and their distribution within the compounds.

The most immediate observations of the above results show that temples were present at three complexes: the Acropolis, Las Palmitas and El Diablo, one temple at each location. These temples were not all constructed during the initial occupation of these areas and they underwent a varied amount of construction works during their use. They also significantly differ in size and architectural ornamentation which can be attributed to the time periods of their construction. Extensive archaeological investigations of the

three temples revealed they all contained at least one tomb chamber, although only one was undisturbed by looters (Houston et al. 2015a). The Acropolis, Las Palmitas and El Diablo were also the only three complexes containing main masonry buildings.

However, they all differ in the numbers of these larger masonry edifices and their relations to the numbers of smaller structures. There is a strong correlation between the presence of large masonry buildings and temples and both of these types of structures seem to be often constructed in proximity to each other.

6.2.2. Outline of the architecture of selected El Zotz complexes

Masonry and non-masonry architecture

The Acropolis is the most nucleated complex of all the analysed areas. It has the greatest concentration of large masonry constructions (12) with fewer associated smaller structures within the complex core (1) and on its peripheries (4). Because the Acropolis is situated in the central precinct of El Zotz, dense with urban architecture, it is relatively difficult to assess the precise boundaries of the Acropolis area. It is possible that more structures located in the neighbourhood of the compound were part of the complex as its peripheral buildings. The area designated in this research as the Acropolis is the smallest compared to the other two large compounds, yet it housed a comparable number of structures (Figure 1.2, Table 6.1). The Acropolis area is here delimited by the locations of excavation units which focused on the monumental masonry structures at the Acropolis core. Excavation strategies, however, might not be the only cause for the structural differences between the Acropolis and the other compounds. Las Palmitas and El Diablo both benefited from their locations further away from the city core in that they could have expanded outward from the complexes' cores and incorporated more land for urban construction. The Acropolis, much like most of the urban districts of modern cities, was significantly spatially constrained by

the existing structures in El Zotz central precinct. As a result, it has greater density and complexity of monumental masonry architecture than the other analysed complexes.

El Diablo, by comparison, has fewer of the main masonry structures (9) and more of the smaller structures both within and outside the complex core (5 and 9 respectively). Las Palmitas' structural composition falls behind the Acropolis and El Diablo with even fewer larger masonry structures (5) and smaller buildings (5 within complex core and 6 outside of it). The remaining two complexes, El Tejón and Group K, contained solely smaller-scale architecture relative to the other investigated compounds. Group K seems more uniform and nucleated in its structural composition and distribution of its buildings, similar to the Acropolis. The area delimited for Group K on the site's plans shows eight smaller platform structures, all forming the core of this small complex. El Tejón, on the other hand, appears to consist of two groups of structures, both located on levelled platforms covering similar-sized areas which are connected by a single walkway. Buildings in El Tejón northern group are larger in size and form a more concentrated compound with four structures, which suggests that El Tejón northern group might have formed the complex core. El Tejón southern group, with only three structure platforms, modest in size, was probably the periphery of the complex. The excavations in 2011 focused on the El Tejón northern group, which is the sole source of data for this hilltop compound.

Open spaces

The number of open spaces (patios, courtyards, and plazas) within the complexes is more problematic to identify. Some of these spaces were given location names and most of these are found within the Acropolis area. However, there are a number of open spaces that were not investigated archaeologically (there were no test pits excavated in these zones) and subsequently they were not identified as separate locations in the

project's records. These locations were given provisional names for the purpose of the structural analysis, but it has to be noted there was no archaeological material recovered from them.

The structures of the Acropolis area, namely the southern block of the palace complex (Strs. L7-22, L7-6, L7-23, L7-10) and Temple L7-11, enclosed the Plaza Principal to the north. A number of other edifices in the central precinct are associated with this large open space. However, Temple L7-11 and the associated palace buildings dominate the area with their size, which implies the Acropolis complex constituted a significant portion of the plaza area. There are further four open spaces located within the limits of the Acropolis complex. Courtyard 1 and Courtyard 2 are two spaces enclosed by the main masonry buildings (the space was separated into two areas during the Late Classic Caal phase). Courtyard 3 is a space located to the west of the Acropolis main structures and is bordered by the structures of the *Northwest Courtyard* (a group of low-platform structures located outside of Acropolis complex core). A Restricted Patio (Str. L7-5) is situated on the corner of the palace complex, between Strs. L7-1 and L7-22. It was bounded by walls rather than buildings. The four open areas were created as confined, private spaces with limited and probably controlled access.

The main masonry structures of the El Diablo complex encircled the so-called Main Plaza, which had relatively restricted access with all possible entryways located in the south part of the group. The East Courtyard is a small area located directly behind Temple F8-1 and enclosed by three small structures (F8-12, F8-13, F8-14). The North Courtyard, a relatively open and accessible space, lies on the northern periphery of the compound bordered by Strs. F8-15, F8-16, and F8-17. Central Courtyard is the most private and isolated part of the site. It lies on a raised platform to the north of the Main Plaza and is enclosed by Strs. F8-6, F8-7, F8-8, and F8-9.

The open areas of Las Palmitas and the two smaller complexes, El Tejón and Group K, did not exhibit the same level of privacy as the courtyards and patios of the Acropolis or El Diablo. Only two distinct spaces are documented for Las Palmitas: East Plaza and West Courtyard. East Plaza is larger in size and is bordered by Temple M3-1, Strs. M3-4, M3-5, M3-7, and M-9. West Courtyard is much smaller in size and it is built on a raised platform west from the larger plaza. Originally, it was associated with only two edifices, Strs. M3-6 and M3-7, which created a north-west corridor through the Las Palmitas palace group.

Structures of both El Tejón and Group K were associated with two courtyards at each location. At El Tejón, the North Courtyard is bordered by structures only on its northern and eastern sides, while the South Courtyard is delimited by three small platforms, leaving the entire complex notably open and accessible. At Group K, the structures seem only loosely arranged to enclose the ‘interior’ open spaces: East Courtyard and West Courtyard.

The number of different types of structures and their distribution within the compound area at El Zotz is dependent on their location relative to the urban core of the site and their status. Complexes found within the central precinct are more nucleated and cover smaller areas, whereas the hilltop complexes cover larger areas and have more developed peripheries. It might be more suitable to view the compounds within the El Zotz central precinct as architectural groups of one large central complex (the whole of polity’s central precinct) with peripheries surrounding all of its internal districts. The three complexes with documented temple edifices also had a prominent presence of large masonry multi-terraced platform structures which were probably used as spaces for elite residence and activity. The final number and types of structures detailed above were not constant through time. The complexes underwent numerous construction

projects over time. Therefore, it is crucial to further outline the construction histories of the complexes in order to combine spatial, structural and chronological patterns at El Zotz.

6.3. Construction events at the El Zotz complexes

It is clear from the excavation records that the El Zotz complexes were transformed by various construction events at different points in time. By looking into the construction histories of individual complexes it is possible to formulate a picture of their structural patterns at different time periods and chronological phases. Details of construction history enable a comparison of the architectural complexes through time, which can then be set within the El Zotz chronology and within the broader history of the Petén region.

6.3.1. Acropolis area construction events

The core precinct within the Acropolis area is composed of 12 structures and one Restricted Patio. These encircle two courtyards (Courtyard 1 to the east, Courtyard 2 to the west).

The first construction phases of the Acropolis core structures (L7-6, L7-1, L7-2, L7-3, L7-8) as excavated between 2008-2011 revealed platforms and sequences of floors dated to the Early Classic period, Saquij I and Saquij II phases (Figure 6.1). The presence of well-constructed and well-preserved floors, walls, and large worked limestone blocks (found on top of the bedrock) suggest significant labour input into the preparation of this area for the construction, followed by a series of renovation works. A test pit located to the southwest of Str. L7-1 (outside of the main masonry group) exposed deep deposits of Early Classic pottery. This deposit indicates that a larger area around the Acropolis main buildings was undergoing construction, possibly in

preparation for the erection of these buildings during the Early Classic period. A tunnel excavation into Str. L7-6 showed that the façade of the first structure built was covered with red-painted stucco and was oriented north (towards the courtyard). Excavations of Str. L7-1 and nearby Restricted Patio (Str. L7-5) revealed that the Early Classic platform of Str. L7-1 had talud wall facing architecture and was almost 3 metres high and 50 metres long. Investigations of a looters' tunnel in Str. L7-8 exposed several construction phases during the Early Classic period, including a looted tomb chamber. All these building works were carried out most likely at the end of Saquij I phase and throughout Saquij II. Thus, the Early Classic Acropolis consisted of a group of possibly five structures, raised on relatively low platforms with some evidence of masonry superstructures, which were arranged around one single courtyard.

The subsequent constructions during the Late Classic Mo' and Caal phases completely covered the Early Classic buildings (Figure 6.2). The erected multi-terrace platforms not only increased the height and monumentality of the Acropolis, but also restricted access to its summit. The excavations of the platform core of Str. L7-1, dating to the Mo' and Caal phases, revealed walls of worked stone blocks with tightly packed fill in the spaces around them. This suggests the construction works at the Acropolis were carefully planned with a significant amount of labour and resources invested in this area. The main stairway of Str. L7-1 was found leading to Courtyard 2, rather than the exterior of the Acropolis, which would have significantly limited access to the compound from the west. A burial of a one-year-old child was found under a step on the south side of Str. L7-6 in these Caal phase levels, thus, suggesting the orientation of this building opened to the south, away from the interior courtyard.

The sequence of floors and walls of Str. L7-7 suggests it was also constructed during the Late Classic period Caal phase, probably as part of the same extensive construction

project as Strs. L7-1, L7-6 and other areas around the Acropolis. It divided the interior courtyard into two separate areas, named Courtyard 1 and Courtyard 2. A cache vessel and associated obsidian and chert artefacts, dated to the Late Classic period, were found under the floor of Courtyard 1. It further confirms that ritual activities, likely associated with the construction events carried out in the compound, were taking place continuously throughout the Late Classic period.

A building with three rooms, all oriented towards Courtyard 2, was raised on top of Str. L7-1. Excavations of the preserved rooms from Str. L7-1 and other Acropolis buildings showed their walls were covered in stucco, some with preserved evidence of red paint (Str. L7-6, Pérez Robles et al. 2009, 49), the floors experienced several remodelling phases and the doorjambs were also probably re-worked during their occupation period. The access into the Acropolis from the north through Str. L7-2 was restricted, as the doorjambs were narrowed during the Late Classic period. The Restricted Patio (Str. L7-5), once an open corner courtyard during the Early Classic Saquij I and II and possibly the Late Classic Mo' phases, became restricted to public access during the Late Classic Caal phase, as its floor was significantly elevated. A vaulted tunnel found underneath Str. L7-8 seems to have been the only access point into the Acropolis from the east. Thus, the later phase of the Late Classic period marks significant changes in the structural patterns of the Acropolis core buildings.

Several minor remodelling works of floors and architecture were carried out during the Terminal Classic period, Cucul phase (Figure 6.3), but the most substantial event was found on top of the Acropolis structures as mentioned in previous chapter (Chapter 5). In the Terminal Classic period the rooms of the Acropolis structures were filled with the so-called 'termination' deposits. These deposits were found inside as well as outside the rooms, for instance in the Restricted Patio, and contained large amounts of ceramic

vessels, musical instruments, fragments of lithics and grinding stones, obsidian, jade, animal bones and other organic material (Newman 2015). The event which led to the formation of the deposit also involved the destruction of vaulted roofs, destruction of the facades, and burning activities. All the resultant material filled the spaces of the Acropolis superstructures.

The architecture of Strs. L7-17 and L7-20 in the Northwest Courtyard (Figure 6.2), erected during the Late Classic period (Caal phase), shows that great care was put into the initial construction of these buildings. The platforms, not as monumental as those of the Acropolis, were faced with well-cut limestone blocks and covered with thick plaster floors. In the subsequent Terminal Classic construction phases, however, the platform core comprised rocks of variable sizes, the platform faces were not as well-maintained and platform surfaces were covered with thin plaster floors in need of several renovations due to their poor quality. A corner stone of Str. L7-17 was a cut fragment of a stela carved with glyphic text which included the date of AD 830 and the El Zotz emblem glyph.

The architectural evidence suggests close relationships existed between the people living in this small complex and the people inhabiting the monumental structures of the Acropolis. The access into Str. L7-17 seems to have mirrored the restrictions and limitations of the Acropolis structures. The restricted access suggests that structures of the Northwest Courtyard had a private nature and were continuously in use throughout the Late and Terminal Classic periods, and at the beginning of the Postclassic. The Northwest Courtyard was the last area to be abandoned in this part of the central precinct of El Zotz.

Temple L7-11 (Figure 6.2), a tall platform resembling the temples from Tikal in its architectural design, is the tallest structure at central El Zotz (12.9 m). The construction core of the basal platform is characterised by the presence of large limestone blocks and material of variable size. The fill contained significant amounts of ceramic material as well as lithic and obsidian objects. A cache was found in the middle of the construction core located between two floors of the Str. L7-11 platform. All the material recovered from this structure dates to the Late Classic Caal phase (with a few ceramic sherds dated to earlier periods mixed with the Late Classic assemblage). Thus, the scope of the Caal grand construction project extended to a complete transformation of the northern part of El Zotz central precinct, which maintained much of its Caal-period size to the present day.

Stairway blocks were found in the profile of Temple L7-11 platform (now covered by thick vegetation) and in the collapsed material at the foot of the structure which places the stairway of the temple on the eastern side of the structure. The temple was facing the *Plaza Principal*, the same space faced by Str. L7-6 during the Caal period. Several stela remains were found at this vast plaza which further confirms this area, immediately south of the Acropolis main structures, was a central gathering and elite display site in the city.

The sequence of construction and occupation levels of Temple L7-11 indicates several building and re-building events followed by a period of decay and collapse. The temple superstructure had two chambers and its walls were covered with a layer of stucco; it is not clear from the excavated remains whether it was additionally modelled or painted. It did not have a vaulted stone roof but the rooms were likely to have been sheltered with wooden panels placed on top of the stuccoed walls. The archaeological investigations revealed layers of material suggesting the deterioration of the building started while

nearby structures of the Acropolis were still in use. Levels of collapsed stucco, collapsed roof, burning events, and collapsed walls did not contain any material dated to the Terminal Classic Cucul or later phases. The temple likely ceased to be in use around the same time as the events which generated the “termination” deposit in the Acropolis took place. An offering of Lacandon Maya vessels (AD 1426-1524, Laboratory number: Beta-250882, Table B.1) was deposited before the final collapse of the temple building. These are the latest artefacts found at the whole site of El Zotz and are a testament to the significance of the Acropolis area continuing even after the abandonment of the site.

6.3.2. El Diablo construction events

The El Diablo complex consists of 24 structures, nine of which form the core group of the compound (Figure 6.4). Structure F8-1, the El Diablo temple, experienced numerous construction events. These are known in great detail thanks to the extensive excavation works focused on this edifice. The first construction episode involved the building of a funerary enclosure for an individual said to be the founder of the dynasty (ca. AD 300-350), along with the first version of Str. F8-1 – a small structure decorated with at least one stucco mask on its façade. The tomb chamber was 3.12 meters long, 1.25 meters wide and 1.5 meters high; it had a vaulted roof and an altar located immediately outside of its access point. The altar had a sculpted nose and eyes and was associated with burning rituals, probably taking place prior to the closing of the tomb chamber.

Then, the Solar Temple was built consisting of a superstructure situated on a series of platforms. It was decorated with elaborately carved and painted stucco masks of deities on its walls as well as its frieze. This structure was oriented to the east (towards the valley and the central precinct of El Zotz) with a stairway approximately 3 meters high. Later on, the stairs were covered and the stairway was moved to the west side of the building (towards the main plaza of El Diablo group). Burial 6 (a child resting in a

supine position inside a pair of lip-to-lip vessels, Scherer 2015, 184) was deposited outside the tomb probably at this point in time.

After these changes, the Sanctuary was built exactly 1 meter to the west of the Solar Temple. With this construction, the floor level in front of the Solar Temple was elevated by about 0.4 meters, which signals that the Solar Temple was probably not in use anymore, or it was accessed from a different point. The Sanctuary is a building of 2 meters by 7 meters with two open access points: to the west and east (in line with the orientation of the Solar Temple). Three more construction phases of Str. F8-1 were carried out afterwards which covered the Sanctuary and the Solar Temple. However, the excavations provided comparatively less information about these stages. The latest activity detected at Str. F8-1 involved dismantling of the last construction phase and then filling of the structure with stucco pieces taken from its frieze and its building blocks.

All the major buildings forming the core of the complex were likely built at the same time (similar to the Acropolis compound). They likewise experienced several incidents of construction works and remodelling carried out during the occupation of the compound, analogous to the multiple construction stages of Str. F8-1. Structures F8-7 and F8-8 had façades of carved stucco painted in red which mirrored the decorative façade of El Diablo temple. Excavations of Str. F8-7 revealed that the building had very few access points to the interior and provided privacy to its inhabitants. It was probably a residential building which was not intended for public affairs. The dimensions and the appearance of the frontal walls of Str. F8-4, on the other hand, were attributed to its function as a possible administrative, rather than a religious or ceremonial, building.

All the major structures of the El Diablo complex (F8-2, F8-4, F8-5, F8-7, F8-8) are known to have experienced the same destruction, removal of stucco, and filling, as was the case with Temple F8-1. However, in Strs. F8-7 and F8-8, the process seems to have been carried out with greater care. The rooms of these structures were filled from the top of the walls and the exterior decorated stucco façade was broken up and the pieces were deposited on the steps of the structures. The sequence of filling of the rooms of these buildings was combined with burning episodes, which suggest this event was accompanied by rituals.

The small group of structures to the north (Strs. F8-15, F8-16, F8-17) had more modest architecture than the structures of the main plaza. The ancient Maya used blocks of limestone to construct the platforms on top of the courtyard floor, and perishable materials to construct the superstructures (Beltrán and Román 2012, 87). These small structures were then filled with a layer of the same material used during the “termination” event visible elsewhere in the complex. Thus, it seems that all parts of the compound were probably abandoned at the same or at nearly the same time.

6.3.3. Las Palmitas construction events

The Las Palmitas complex is composed of 16 structures; its dominating monument is Temple M3-1 of 14.7 m. Temple M3-1, facing the East Plaza of the complex, had a masonry superstructure with vaulted roof, now partially collapsed. The floor of the East Plaza was prepared first, after which the temple and the platform of the courtyard group (Strs. M3-6, M3-7) were erected. The big structures of the courtyard (West Plaza) – Strs. M3-6, M3-7 – were built during one construction event, followed by several relatively minor remodelling works when new floors were constructed in the patio and on the landing of Str. M3-7. In contrast, Temple M3-1 was constructed in several stages, which gradually elevated the structure and added smaller buildings next to it. All

this construction took place during the Late Classic Caal phase (Figure 6.5), and the two structures associated with the West Plaza as well as the temple were likely constructed during one effort as an integrated complex. Structure M3-5 was also constructed on top of the East Plaza floor, suggesting it was part of the original construction project at Las Palmitas. Structure M3-5 likely played part in the events or ceremonies performed at the East Plaza. Structure M3-9 was possibly erected during the same construction event as Strs. M3-6 and M3-7, but after the construction of the West Plaza platform.

Structure M3-6, a part of the presumed 'palace' group at Las Palmitas, had eight rooms. The interior of the building was divided into small, confined spaces with relatively narrow doorways facing the exterior and restricting the access to the interior of the building. Structure M3-7 had equally restricted access into its rooms as Str. M3-6. The West Courtyard located between Strs. M3-6 and M3-7, however, seems to have been a relatively open area, especially with no structure enclosing it to the south and north (in the original Caal phase design). The access into the group was, thus, more open than the access into the Acropolis courtyards (Courtyard 1 and 2) during the Caal phase.

The West Courtyard of the Las Palmitas complex opened towards the South Platform. The South Platform area was built over levelled bedrock. The presence of the platform designated as Str. M3-13, two associated chultuns, and a possible natural socket for collecting water on the corner of Str. M3-13, suggest that this area served a residential function. The platforms of the smaller structures in this area and elsewhere in the complex likely served as bases for perishable buildings. There might have been a lot more of these small peripheral structures built on the bedrock in the surrounding areas which at the moment remain undetected.

Several floors were built and renovations were carried out during the occupation period of Las Palmitas complex, especially in the rooms of the main masonry buildings. After the renovation of the East Plaza floor, Str. M3-3, a small multi-terraced platform probably supporting a perishable building was constructed next to Temple M3-1 and over a vaulted tomb chamber. Structure M3-11 on the North-West corner of Temple M3-1 had no tomb, and it is not clear how it related stratigraphically to the rest of the structures at Las Palmitas. Like Str. M3-3, Str. M3-11 probably supported a perishable building.

Structure M3-8 was the last erected at Las Palmitas, in the 9th century. In front of the platform of Str. M3-8 to the south is an extension of 3.5 m width and 0.5 m height, which limited access to the West Plaza on the north side. Before construction, the ancient Maya buried an individual on the primary axis of what was to become Str. M3-8. The platform of Str. M3-8 was the only construction of the Terminal Classic period, Cucul phase, at Las Palmitas and also seems to have supported a perishable building.

Archaeological material excavated from a rubbish pit located below the northern edge of the patio platform, north of Str. M3-6, was dated in majority to the Terminal Classic period by its ceramic content. Very little Late Classic material was found in this rubbish pit, suggesting that disposal patterns might have been different during the Late Classic and the Terminal Classic at Las Palmitas complex. Likewise, there could have been substantial differences in people's activities and the primary function of the architectural complex during the two time periods. There are large amounts of pottery and other material culture remains dated to Cucul phase activities at Las Palmitas, yet there is very little evidence of construction work or major projects of similar magnitude as those of the preceding Caal phase. Even though the complex was likely occupied at

the beginning of Early Postclassic Choc phase, there is no evidence of any construction works carried out in the Early Postclassic.

6.3.4. El Tejón construction events

The El Tejón complex is much smaller in size than the other three complexes, and few structures were mapped in this area to date. The overall amount of material culture recovered from the excavations at El Tejón is much lower than for the other complexes (Figure 6.6). Looted tomb chambers were discovered at several of the structures and one yielded a carved shell earspool with jade mosaic – both precious materials. This is the sole piece of evidence that El Tejón was likely linked to the status of the El Diablo complex located nearby.

Because of the relatively recent discovery of this architectural group, the archaeological investigations were mostly focused on test pits and preliminary assessments of its architecture. The excavation units were located on the platforms of Strs. G6-1, H6-1, H6-2 and on the eastern side of the group platform where possible stairway – access to El Tejón - was located (Table 6.1).

So far, it is known that there were at least two construction phases at El Tejón. The first involved the construction of the round structures, inside which funerary chambers were located. The second phase involved the construction of platforms which supported buildings of perishable material. It can be seen that some of the structures of El Tejón are aligned with those of El Diablo. It is additionally evident that El Tejón structures had their rooms intentionally filled (Piedrasanta 2012, 192) before their abandonment which mirrors the event recorded for structures at El Diablo. Coupled with the spatial proximity, the structural resemblance between El Tejón and El Diablo suggests a strong connection between the two complexes.

6.3.5. Group K construction events

Group K is an assemblage of small platform structures associated with the Western Plaza (Figure 6.7) in the urban core of El Zotz. The group was investigated through a series of test pits, of 1 by 1.5 m, located on the group platform and Strs. K8-3 and K8-7. While these excavations did not recover much architectural information to distinguish individual construction events of the group, they provided large amounts of ceramic material which most likely directly correspond to the chronology of occupation of these structures (Caal and Cucul phases) and to the activities of their inhabitants. It is clear, however, that this complex did not have as elaborate architecture as the other complexes of the central precinct. The low platforms most likely supported superstructures of perishable material. So few limestone blocks were found associated with Group K area that it is also likely that many of the structures did not even have masonry platforms supporting perishable buildings.

The location and distribution of architecture of Group K provided open access into the plaza spaces. The structures are aligned to form and partially enclose two plazas or courtyards. Each of these two open spaces is enclosed by four structures of varied size on each side. However, there seem to be no additional features that would restrict entry into the compound. This makes Group K the most open complex, and one that saw least construction over time, out of all the five complexes analysed in the current research.

6.4. Special deposits at El Zotz complexes

Certain types of deposits and architectural features found associated with Maya structures are assumed to indicate the relative importance of places and the relative status of groups associated with them. In order to better understand the demographics of inhabitants of El Zotz complexes it is crucial to take into account the presence and

location of such special deposits. The deposits, outlined in Table 6.2, include burials, caches, or offerings, and deposits of unique artefacts.

The burials found within the analysed complexes are here considered to be significant for the analysis because of the importance of human remains in Maya culture. Not all of the human remains outlined in the current analysis were adults, but they were all incorporated within the architecture of the compounds. This implies their strong association with these places, either through blood ties or through the ceremonies and rituals performed during the deposition of their bodies underneath or within the structures. The burials documented at El Zotz include various means of depositing human remains, such as in a tomb chamber, in a cyst, in ceramic vessels, as well as without any associated structures. Looted tomb chambers, of which many were discovered at El Zotz in all sectors of the site, are also included in the analysis if they are located in one of the analysed complexes as they are a clear representation of burials of high-rank individuals.

Caches are any collection of artefacts, found in primary contexts and often on primary axes (Loten and Pendergast 1984, 3; Pendergast 1998, 61), which reflect the deliberate actions of the ancient inhabitants to deposit objects, in a variety of locations, which remain buried or hidden. Caches are often associated with events such as the construction of a new building or platform, or the sealing of a tomb chamber; they can also mark renovation efforts (McAnany 2010, 137; Pendergast 1998, 56-61). When they are intrusive into floors or platforms or other contexts, we assume that they were part of a ritual associated with a special event or occasion – religious, political, social or cultural. Some places accumulate many caches over time. Caches are often interpreted as ‘offerings’, and this seems reasonable, yet we do not really know why objects were cached. Modern time capsules, for example, could be interpreted as offerings but the

intent is really to mark a particular point in time. Therefore, we can consider that a cache is an offering but remember that this is a hypothesis only.

There are finds, however, that, given their context and the nature of the artefact(s), do not strictly conform to the definition of a cache. The deposits of unique artefacts are included in my research as a category of finds which reflect significant behaviours associated with the analysed architecture but would not be normally classified as caches. They can be found in primary or secondary contexts. They can be single objects or they can be a part of a larger assemblage. The meaning and significance of these artefacts to the current research lie in their potential to reflect the socio-economic status through their uniqueness and their intended functions.

Table 6.2 Special deposits at the selected complexes at El Zotz.

Complex	Caches			Unique artefacts	
	Location; Chronology	Description	Offerings	Location; Chronology	Description
Acropolis area	Plazuela 2: (Late Classic, possibly Caal)	Located in the floor of the courtyard	One Tinaja Red bowl, an offering of lithics and obsidian artefacts nearby: 281 lithic blades, 2 obsidian blades, 15 eccentric obsidian pieces, 27 eccentric lithics, 5 obsidian cores	L7-17: Terminal Classic (Cucul)	A fragment of cut stela; it was found reused as a corner stone of the structure's platform; the glyph inscription on the stela includes El Zotz emblem glyph and the date of AD 830
	L7-11: Late Classic (Caal)	Located inside the platform core	Two vessels in a lip-to-lip position of Sacche-Palmar Orange Polychrome type; offering placed inside included: 2 mica pieces, 1 jade pectoral, 51 shark teeth, 1 Spondylus shell pendant		
	L7-11: Colonial, AD 1426-1524	Located on the floor inside the room of the temple's superstructure	Two vessels of Lacandon Maya style, most likely from the area of Lake Petén Itzá		
El Diablo	F8-1: Early Classic (Saq'ij II)	Located at the central axis of the pyramid, associated with later construction stages	3 vases with lids and fragments of decorative incense burners	F8-1: Early Classic (Saq'ij I)	Altar stone sculpted to possibly represent a deity with visible nose, eyes and ears, associated with the royal tomb
	F8-1: Early Classic (Saq'ij II)	Located under the penultimate plaza floor in front of the temple	2 Aguila Orange lip-to-lip bowls		
	F8-1: Early Classic (Saq'ij I)	Located under the floors of the Sanctuary building and in front of the royal tomb chamber	17 small bowls of Aguila Orange type and Aguila: Dos Hermanos Red variety; 16 found in lip-to-lip positions all containing human phalanges deposited inside, 1 bowl found alone with no recognisable offering inside		
	M3-1: Late Classic (Caal)	Located in the platform core and associated with the construction process	Cache of variable material: faunal vertebrae, lithics, remains of resin - likely copal		
El Tejón					
Group K					

Complex	Burials		
	Location; Chronology	Description	Offerings
Acropolis area	L7-8; Early Classic (possibly Saquij II)	Tomb chamber: looted, material recovered was mixed and fragmented, the chamber was intrusive in the penultimate stage of construction	Fragmented material, evidence of fine ceramic vessels
	L7-3; Late Classic (possibly Mo)	Burial 4: A young woman, 20-23 years old	Two vessels: a bowl of Tinaja Red type and a bowl of Cambio with red wash
	L7-6; Late Classic (possibly Caal)	Burial 2: A child of one year of age, deposited below a stairway of the structure	None
	L7-1; Late Classic (Caal)	Burial 5: An adult male located under the steps of the last construction stage	One small vessel
	L7-2; Late Classic (Caal)	Burial 8: An adult in a cyst	Three vessels: a bowl, a vase and a tripod plate
	L7-17; Terminal Classic (Cucul phase)	Burial 12: an elderly man located underneath the floor of the structure	None
	F8-14; Early Classic (possibly Saquij II)	Burial 1 in tomb chamber: looted, chamber walls painted red, fragments of human bones and teeth recovered	No significant fragments of artefacts recovered
El Diablo	F8-1; Early Classic (Saquij I)	Burial 6 (Cache 3): remains of a young child placed in vessels lip-to-lip of Triunfo Striated type, remains partially burnt	None
	F8-1; Early Classic (Saquij I)	Burial 9 in tomb chamber: a man of 39 years of age, 6 children between 1 and 5 years old placed in lip-to-lip vessels with evidence of burning, royal burial, possibly of the founder of El Zotz dynasty	Numerous artefacts: 39 ceramic vessels, some including offerings of human and animal remains and other organic materials (possibly food or drink), sculpted jade ornaments, shells, hematite cubes, textiles among others
	M3-3; Late Classic (Caal)	Tomb chamber: looted and collapsed, fragmented remains found	Fragmented material
Las Palmitas	M3-4; possibly Terminal Classic (Cucul)	Burial 7: adult individual, placed possibly in a cyst which later collapsed, located beneath the last patio floor - possibly an intrusive burial	3 vessels: cylindrical vase, a small bowl placed inside a tripod plate, 5 fragments of lithics
El Tejón	H6-2; Early Classic (Saquij I or II)	Tomb chamber: Looted, located at the centre of a circular substructure	Fragments of jade, minerals, shell and shell ornaments, ceramic vessels, lithics; the most precious find are two shell earspools with jade mosaic
Group K	K8-2; Early Classic (?) Saquij II)	Burial 3: Adult individual, located in a cyst intrusive to floor 2 of the structure	4 ceramic vessels: a polychrome bowl, a polychrome vase, a monochrome bowl and a monochrome plate

As reflected in Table 6.2, the Acropolis and El Diablo complexes were the sites of the greatest amounts of ritual activity which created physical deposits in comparison to the other complexes. Six burials, one discovered as a looted tomb chamber, were found at the Acropolis, alongside three caches and one unique artefact. Three burials were found at El Diablo; two of these were adults in tomb chambers and one was a child deposited inside a pair of lip-to-lip ceramic vessels. The tomb chamber at Temple F8-1 contained a body of an adult and bodies of six children. This one structure, Temple F8-1, was also the source of all the cache and unique artefacts found in the complex. Las Palmitas had proportionately the fewest deposits, such as burials or caches, out of all of the larger architectural complexes. Only two burials, one in a tomb chamber, and one cache were found at Las Palmitas. At both El Tejón and Group K, only single burials were discovered at each compound. No caches were found at these complexes, although the two smaller compounds were subject to less excavation than the larger complexes, and this might account for the lower numbers of recovered deposits.

6.5. Summary of spatial and structural configurations at El Zotz

Architectural features are the first visible characteristic of the socio-economic and political status of households. As noted previously in this work, assigning elite status to a social group is usually based on the architectural evidence, which includes the location of compounds, their structural attributes and special deposits. Three compounds outlined in this research stand out in terms of their size, types of structures, amount of labour and resources invested in the construction and renovation works, and in the number of special deposits. These are: the Acropolis, El Diablo and Las Palmitas.

The Acropolis, located at the very centre of the urban core of El Zotz, has the greatest number of large masonry structures on multi-terraced platforms and the tallest temple at central El Zotz. Excavations revealed numerous construction events and the greatest

concentration of burial and special deposits in relation to other parts of the site. However, the Acropolis had the longest duration of occupation, which likely contributed to the differences between it and other analysed complexes. The majority of construction works, and the ones with most impact on the structural features of buildings, were carried out during the Late Classic Mo' and Caal phases. The temple building, Str. L7-11, was constructed during the Caal phase, as was the Northwest Courtyard group. Only one burial was dated to the Early Classic Saquij II phase; one was dated to the Mo' phase; three were dated to the Caal phase and one to the Terminal Classic Cucul phase. Caches were dated to the Caal phase and one to the colonial period or later (Lacandon vessels). The one unique artefact, a fragment of a stela, was dated to the Terminal Classic Cucul phase.

The El Diablo compound, even though located away from the urban core of the polity, closely compares to the Acropolis in terms of the numbers of large masonry buildings on multi-terraced platforms. It additionally has the largest number of small structures within the complex core and on the periphery compared to other analysed complexes. Numerous construction events characterize the structures surrounding the Main Plaza at El Diablo. Temple F8-1 seemed to have been a focal point for the compound with its intricate stucco masks, multiple burials and caches and an altar stone found within the structure's construction core immediately outside the tomb chamber. Most of the burials and caches from El Diablo are dated to Saquij I phase, although, the later Saquij II phase special deposits are also found in significant numbers.

The structures of the El Tejón complex did not exhibit the same level of complexity in terms of architectural embellishment or renovation efforts as those at El Diablo, even though the compound had a similar location – on a hilltop to the west of the central precinct of El Zotz – and chronology of occupation – Early Classic Saquij I and Saquij

II phases. The El Tejón structures were smaller in size, had fewer construction episodes and did not exhibit the same level of architectural ornamentation as the edifices of their larger neighbour, El Diablo. However, the location, chronology of occupation, a tomb chamber and a unique set of earpools crafted from precious materials unearthed in one of the circular El Tejón structures, all suggest that this small complex was closely associated with El Diablo and possibly shared its socio-economic and political status.

The Las Palmitas complex, also located away from the urban core of the city, had the lowest number of large masonry structures and in general had fewer structures in its core and periphery in comparison to El Diablo, the other large hilltop complex.

Excavations revealed numerous construction events, implying that there was nonetheless a significant amount of labour and resources put into the Late Classic development of the complex. However, very few special deposits were found at Las Palmitas: one Caal tomb chamber (looted), one Terminal Classic burial and one Caal phase cache deposit suggesting its occupants may have been of lower status than those of the contemporaneous inhabitants of the Acropolis.

Group K, situated like the Acropolis in the urban core of El Zotz, is more nucleated than El Tejón but less structurally developed in that it reflects less intensive construction activity. There is very little evidence of renovation to structures. Only one cyst burial was discovered at Str. K8-2, the largest structure of the complex, which was dated to possibly Saquij II or Mo' phase. This suggests that K8-2 was probably the earliest construction effort in this area while other structures were added to the complex later in time until Group K was developed into an architectural unit during Late Classic Caal phase.

Access to the complexes is a feature that we assume reflected social and political status of households, at least in the Late Classic. Limiting access can result from building agglomeration, although even in this case the occupiers would have to have controlled the labour and resources to repeatedly build and renovate. My assumption here is that limiting access, whether initially inadvertent or purposeful, required substantial amounts or resources spent on strategies which regulated the flow of people into and out of the compound. The three complexes constructed on hilltops all had the advantage of having the terrain act as a constraint on accessibility and visibility. However, each exhibited a different architectural strategy to create private areas within the complexes themselves. The occupants of El Diablo, in addition to being distanced from the urban core of El Zotz, secluded a small area of the compound. Structures F8-6, F8-7, F8-8 and F8-9 of El Diablo formed a private group around the Central Courtyard, right next to but separated from the Main Plaza of the complex. The structures of El Tejón and Las Palmitas did not form secluded courtyard or plaza groups in the way characteristic of El Diablo. Even the masonry buildings on platforms at Las Palmitas opened onto a courtyard delimited by structures on two sides rather than enclosed on all four sides. My assumption is therefore that the individuals in these compounds were not attempting to restrict access.

In the urban core of the polity there are no natural barriers (such as high relief) to impede access to the administrative and residential areas. The Acropolis occupants (or users) had to invest significant amounts of resources to create spaces of limited access. They only did so during the Late Classic period and each construction project increasingly limited the access to the Acropolis structures and the courtyard (divided into Courtyard 1 and 2). During the Early Classic period, there seem to have existed fewer if any access constraints. Group K seems to have the least limited access and

comes across as a relatively public compound when compared to the other analysed groups.

Using the above spatial and structural information, it is possible to propose a primary assessment of the socio-economic statuses of the compounds relative to each other and set in the different chronological phases. During the Early Classic period it seems that El Diablo dominated over the Acropolis and El Tejón. El Diablo was likely established as the seat of royal power at El Zotz with the tomb chamber – the earliest discovered at the site – probably holding the remains of the first ruler of the *Pa' Chan* dynasty.

However, all three complexes underwent construction and development through Saquij I and Saquij II phases, and the two smaller complexes grew in size. The smaller complexes also had tomb chambers incorporated within their structures, and the presence of tomb chambers is a reliable sign of elite status. However, the smaller size and more open access into the Acropolis and El Tejón during Saquij II may reflect the fact that the Acropolis and El Tejón occupiers held lower (or different) socio-political status than those resident at or using the buildings of El Diablo. As stated by many Maya researchers (for example, Smith 2003, 214; Webster and Inomata 2004, 167; Guderjan et al. 2003, 19; Houston and Inomata 2009, 81; among others), the proximity to the central precinct, sacred places or the royal court usually signals higher status of architectural groups, be they residential or administrative. In the case of the Early Classic El Zotz, it might be that El Diablo, the royal court and place of earliest recorded royal tomb burial, was the “central precinct” and the place of the highest socio-political rank at the site. If proximity were paramount, El Tejón could potentially have a higher status than the Acropolis because of its location closer to El Diablo, and because of the naturally more defensive and relatively more private positioning on top of a hill.

In the Late Classic period, the construction projects at El Zotz focused on the urban core in the valley floor during the Mo' phase, and subsequently spread into the Northern Group, Las Palmitas, during Caal phase. While the Acropolis and Las Palmitas experienced a similar intensity of construction, the Acropolis revealed a greater amount of ritual activity. Perhaps the Acropolis occupiers had higher socio-political status than other households at El Zotz because they were members of older families associated with the community. The Acropolis probably became the new location for the royal lineage after the abandonment of El Diablo and El Tejón. And while Group K was situated closer to the central precinct and closer to the Acropolis than Las Palmitas, its structural features suggest it sheltered individuals of lower status than those associated with the large hilltop complex. Las Palmitas had a range of major masonry structures and a temple building constructed during the Caal phase project, whereas Group K was probably peripheral to the larger structures and temples in the urban core of El Zotz.

After the apogee of construction works of the Caal phase, the Terminal Classic Cucul phase gives evidence for notably different social and depositional behaviour, including the ritual deposit at the Acropolis and new location of a rubbish pit at Las Palmitas. There are significantly fewer construction projects being undertaken and completed in the Terminal Classic, and most of them took place at Las Palmitas and the structures of the Northwest Courtyard. Because of these changes, it is a lot more difficult to assess the relative difference in socio-economic statuses between complexes. If it is assumed the seat of royal power during the Late Classic was centred at the Acropolis, then it probably remained there until the abandonment of the group. Las Palmitas was probably a household for another elite court which might have benefited from the socio-political transformations of the Terminal Classic and Early Postclassic periods and might have

experienced a revival, albeit short-lived, when the royal courts in the region struggled to maintain their power.

To summarise the proposed hypothesis concerning the relative socio-economic and political status of each complex through time, the seat of royal power was originally located at El Diablo and later shifted to the Acropolis. During the Early Classic period, both El Tejón and the Acropolis were places of elite residence. Its proximity to El Diablo suggests that El Tejón probably housed or provided the daily working or civic space for individuals who held slightly higher socio-political status than those associated with the Acropolis. During the Late Classic, Las Palmitas was a place of elite residence, based on the fact that the compound contained its own temple edifice and large multi-room masonry structures. Group K likely housed a group of individuals of low socio-economic status, perhaps lower or managerial elites (as the complex is located close to the central precinct) or a middle-class household. During the Terminal Classic period, the Acropolis likely maintained its status as the seat of a royal court of El Zotz, but individuals living in Las Palmitas might have gained in economic influence and socio-political power, as evidenced by the sponsorship of large feasting events and construction projects carried out during the Terminal Classic.

Consumption patterns, described in subsequent chapters, will test the above hypotheses about socio-economic and political dimensions of the El Zotz complexes.

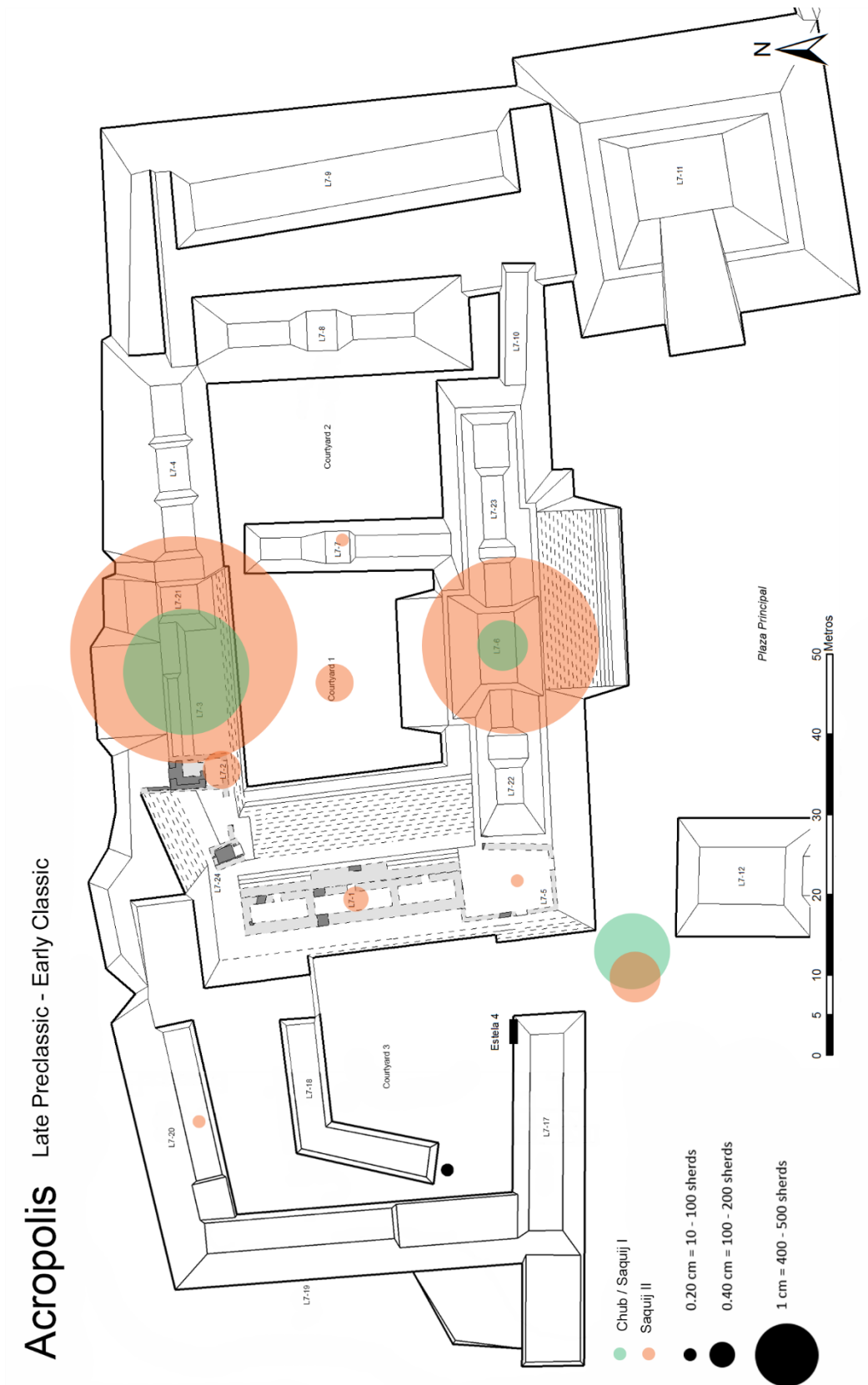


Figure 6.1 Distribution of excavated ceramics at the Acropolis (Chub – Saquij II). (Map by T. Garrison, edited by the author)

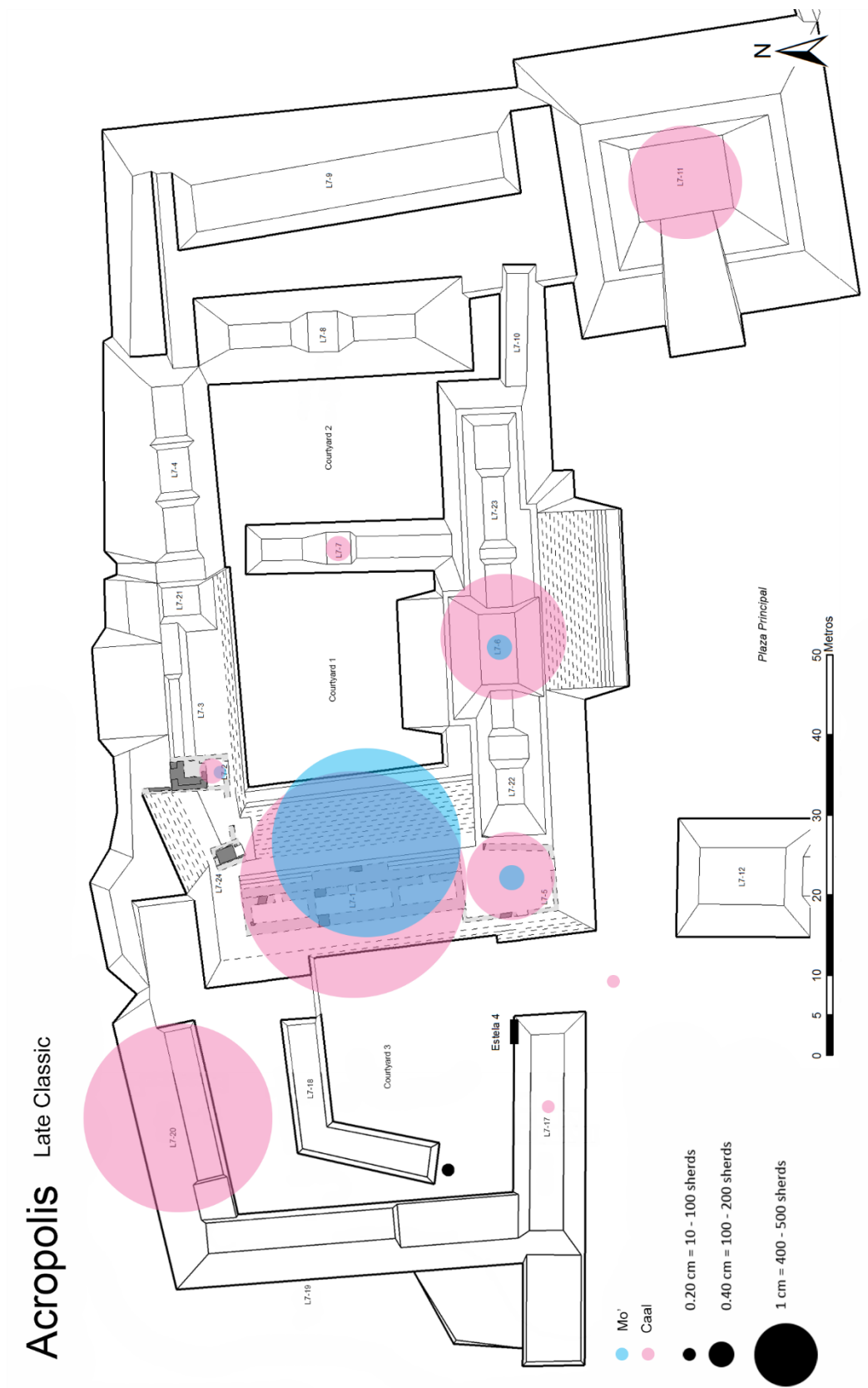


Figure 6.2 Distribution of excavated ceramics at the Acropolis (Mo' – Caal). (Map by T. Garrison, edited by the author)

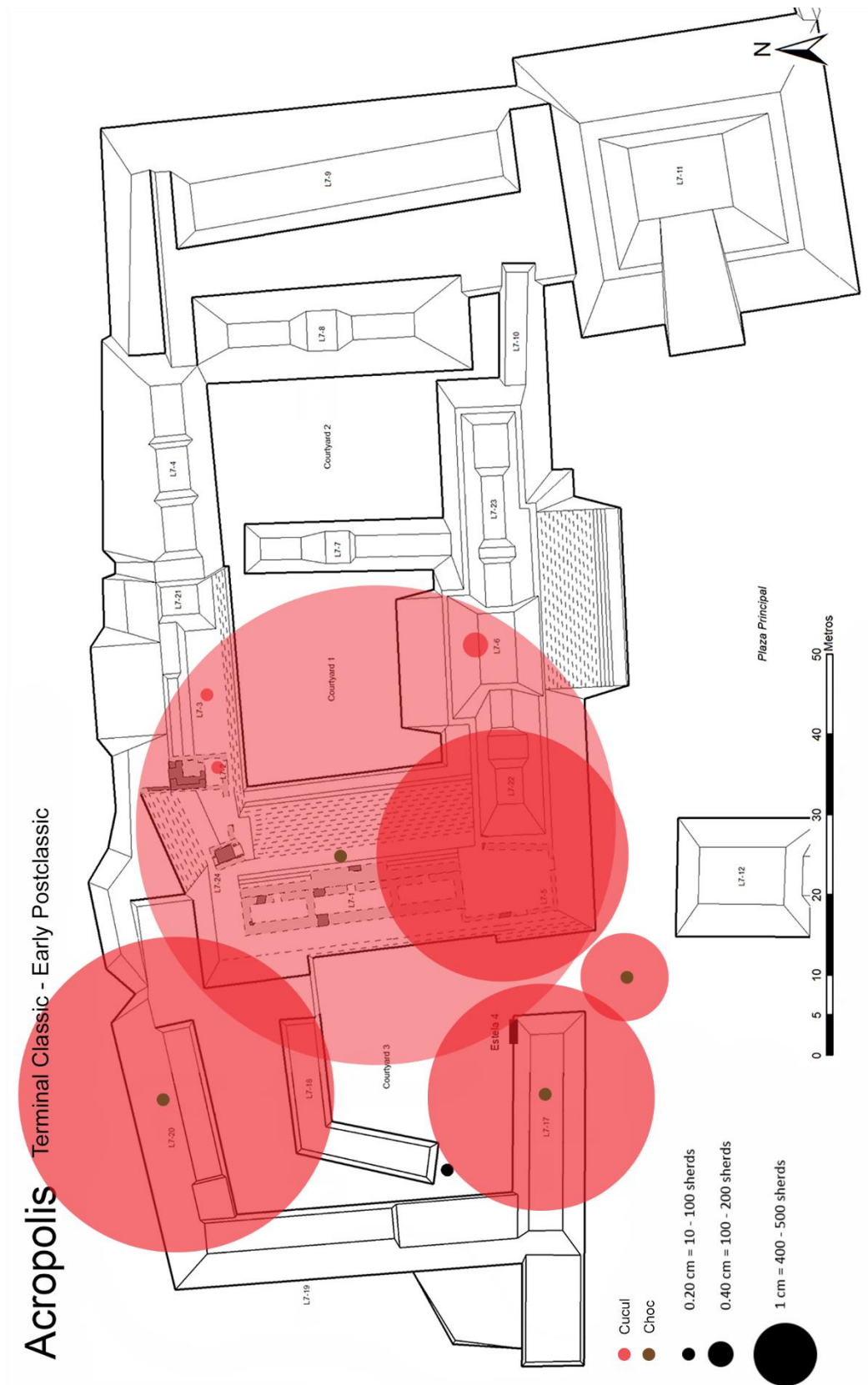


Figure 6.3 Distribution of excavated ceramics at Acropolis (Cucul – Choc). (Map by T. Garrison, edited by the author)



Figure 6.4 Distribution of excavated ceramics at El Diablo (Chub – Saquij II). (Map by T. Garrison, edited by the author)

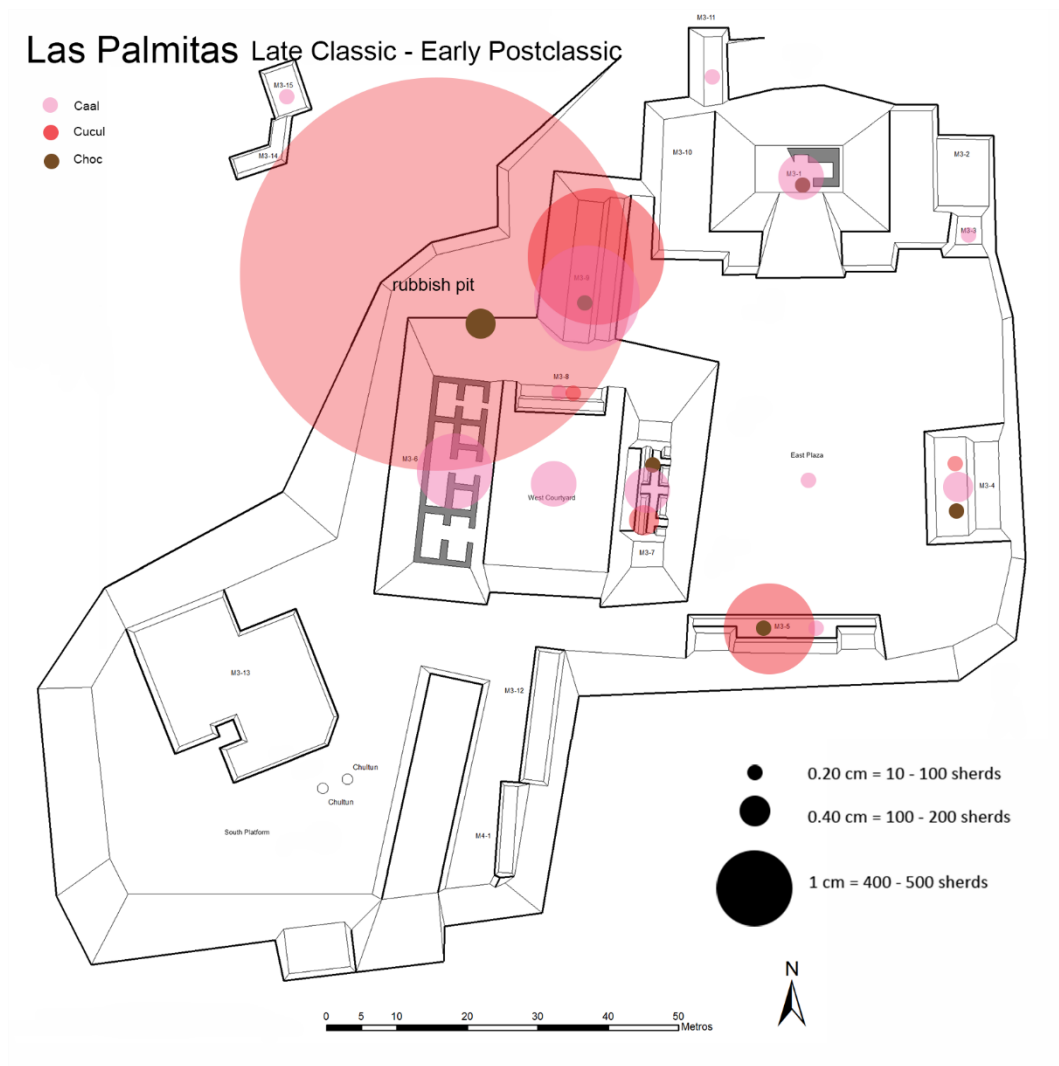


Figure 6.5 Distribution of excavated ceramics at Las Palmitas (Caal – Choc). (Map by T. Garrison, edited by the author)

El Tejón Late Preclassic - Early Classic

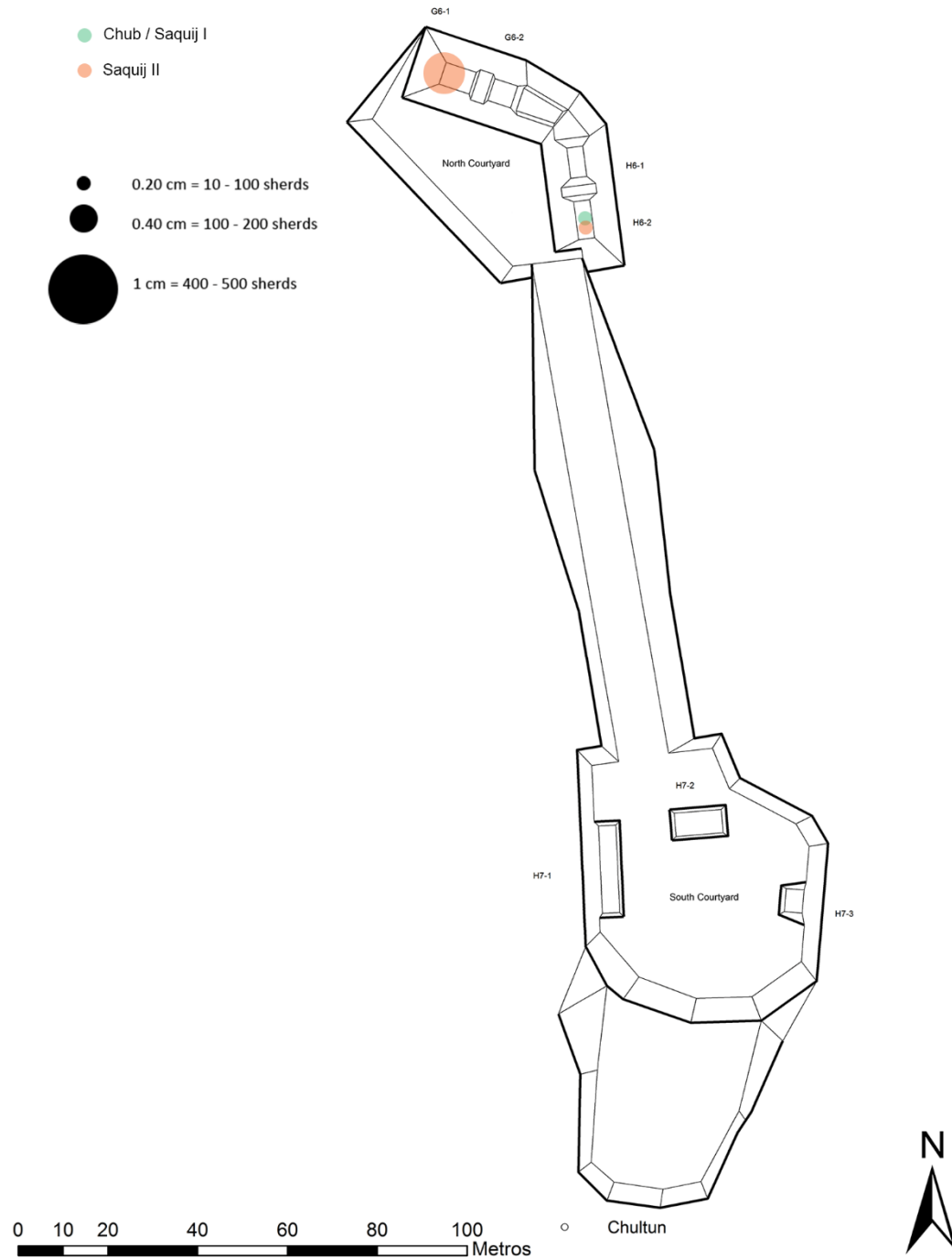


Figure 6.6 Distribution of excavated ceramics at El Tejón (Chub – Saquij II). (Map by T. Garrison, edited by the author)

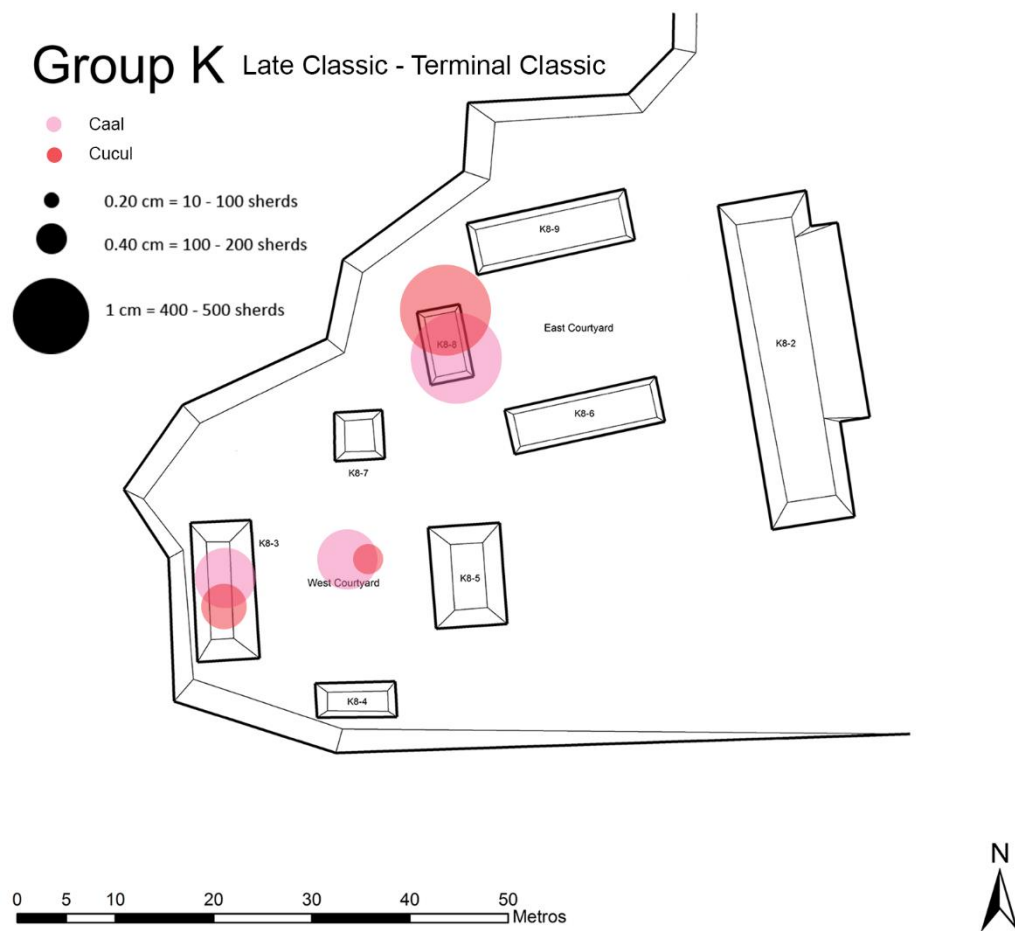


Figure 6.7 Distribution of excavated ceramics at Group K (Caal – Cucul). (Map by T. Garrison, edited by the author)

CHAPTER 7. Consumption of Ceramic Goods at El Zotz:

Results of Ceramic Analysis

The quantitative and qualitative values assigned to the ceramic material through different types of analyses yielded results which were reviewed and set within the spatial and structural dimensions of the complexes. To compare the results, the data were also embedded within the established chronology of the contexts at the site. The results show that there were two major chronological stages in El Zotz occupation history, which are also reflected in the spatial patterning.

The occupation history of El Zotz discussed in previous chapters clearly shows there was a shift in location of elite compounds between the Early and Late Classic periods. These changes accompanied wider regional shifts in political powers and social changes to the ever-growing elite groups in the region of Petén and beyond (for example, Sharer and Traxler 2006, 381-400; Christie 2003, 2; Smith 2003, 185; Stuart 1993, 323-324). The El Zotz complexes of El Diablo and El Tejón, occupied during the Early Classic period (Saquij I and Saquij II phases), were abandoned at the onset of the Late Classic period (Mo' phase) or towards the end of the Early Classic period (Saquij II phase). Other areas, namely the Las Palmitas and Group K compounds, were then settled and continued to be inhabited until the Early Postclassic period (Choc phase). These occupation patterns are reflected in discontinuities between Early and Late Classic contexts excavated at the site and between the material culture associated with both time periods. The ceramic assemblages from the Early Classic and Late Classic contexts at El Diablo, El Tejón, Las Palmitas and Group K cannot be directly compared. The El Zotz Acropolis, which is located in the central precinct, is the only compound within the current analysis which was occupied throughout the whole of the Classic period,

probably starting as early as the Late Preclassic period (Chub phase) and ending at the end of the Terminal Classic (Cucul phase) or beginning of the Early Postclassic period (Choc phase).

The core of the ceramic comparative work revolves around the dynamics among the contemporaneous assemblages excavated from different sectors at El Zotz. The Early Classic period comparison includes assemblages dated to Chub, Saquij I and Saquij II phases from contexts at El Diablo, El Tejón and the Acropolis. The Late Classic period analysis compares the assemblages dated to Caal, Cucul, and occasionally to Choc phases found at the Acropolis, Las Palmitas and Group K.

After I classified the ceramic material into type-variety categories, I used various methods of data analysis and statistics to assess the presence of consumption patterns within the El Zotz ceramic assemblage. The results of every method of analysis were evaluated at each stage and were subsequently used to select samples for further stages of data analysis. I have formed a continuous chain of analyses in which each method feeds results into the next stage of analysis. This ensures that I obtain both reliable large-scale results in the initial stages of the analysis as well as detailed results of small-scale samples.

7.1. Production Step Index

The first line of investigation of El Zotz ceramic assemblages reviews the scores of Production Step Index analysis. The results represent the average number of steps invested in surface enhancement of vessels and are calculated for each architectural complex. The final results of Production Step Index (PSI) analysis (Table 7.1) show the average step scores of pottery surface decoration for each architectural complex across different chronological phases.

Table 7.1 Summary of Production Step Index scores for El Zotz complexes across all chronological phases

Chronological phase	El Diablo	El Tejón	Acropolis	Las Palmitas	Group K
Chub / Saquij I	1.116	0.849	1.064		
Saquij II	0.959	0.747	1.363		
Mo'			1.870		
Caal			1.550	0.872	1.132
Cucul			0.766	0.852	0.771
Choc			1.802	0.910	1.091

7.1.1. PSI for Late Preclassic Chub (200 BC – AD 250) / Early Classic

Saquij I phase (AD 250 - 400)

Table 7.1 and Figure 7.1 clearly illustrate that the distribution of ceramics with higher decorative scores was not uniform through time. During the Chub and Saquij I phases, El Diablo achieved the highest average score of 1.116 steps per ceramic sherd found in the complex. The PSI of the Acropolis complex was comparatively lower, at an average of 1.064 steps, followed by El Tejón with considerably lower average PSI of 0.849 steps. The Acropolis ceramic assemblage constitutes 67% of Chub/Saquij I phase ceramics whilst the assemblages from El Diablo and El Tejón constitute 29% and 4% respectively. Thus, the ceramic sample from the Acropolis was more than twice the size of that from El Diablo, but it contained proportionately more sherds which scored 0 and 1 steps during the analysis. The ceramic collection at El Diablo dated to Chub and Saquij I phases contained comparatively more of the vessels with greater investment in decoration than the ceramic assemblages at the other two complexes during the same time period.

The Acropolis ceramic sample contained a greater proportion of closed vessel forms, such as jars and other containers with restricted orifices, (74%) in comparison to El

Diablo's ceramic sample which contained proportionately less closed-form vessels (70%), (Table 7.2). The El Tejón ceramic sample, however, contained the biggest proportion of closed-form vessel fragments during this time period (78%). The proportions of open vessel forms (serving vessels, such as bowls, plates, vases) showed a reverse pattern – El Diablo complex contained the largest proportion of open-form vessels within the ceramic sample (29%), Acropolis contained 26% and El Tejón – 22% (Table 7.2). This pattern might indicate that the activities at both El Tejón and the Acropolis complexes were focused more on storage, perhaps long-term storage of drink and foodstuffs, or the distribution and re-distribution of these resources among different elite households. It might be that a concentration of large quantities of low-scoring ceramics of closed forms indicate an administrative function of architectural groups. In contrast, a greater presence of serving vessels within a sample suggests that the population at El Diablo was perhaps involved in consumption activities, such as feasts, to a greater extent than the populations occupying the Acropolis or El Tejón.

Table 7.2 Forms of the ceramic sample of El Zotz dated to Chub/Saquij I phase.

Ceramic Form	El Diablo	El Tejón	Acropolis	El Diablo	El Tejón	Acropolis
Open form	45	6	88			
Bowl	151	10	222			
Plate	30	0	17			
Bowl/Plate	16	3	159			
Bowl/Vase	1	0	1			
Vase	0	0	2			
Open forms and vases	243	19	489	29%	22%	26%
Closed form	490	56	1,054			
Jar	82	8	344			
Olla	8	3	0			
Closed forms	580	67	1,398	70%	78%	74%
Incense burner	0	0	1			
Lid	3	0	3			
Special forms	3	0	4	0%	0%	0%
Unidentified	7	0	11	1%	0%	1%
Total	833	86	1,902			

The differences between the relative frequencies of score-0 and score-1 sherds at the Acropolis and El Diablo are very subtle, only 1 percentage point (Table 7.3, Figure 7.1). However, more vessel fragments indicative of higher decorative scores (5 and 6 steps) were found at El Diablo, whereas the Acropolis assemblage contained proportionately more ceramics with scores of 3 and 4 steps (Table 7.3, Figure 7.1). Whilst these differences seem insignificant, especially when viewed against the relatively small numbers of sherds (Chub / Saquij I assemblage constitutes only 7% of the total diagnostic collection from El Zotz), it is also possible that these differences are indicators of social, political or functional differences between El Diablo and Acropolis complexes during this time period.

Table 7.3 Proportions of sherds with different step scores in El Zotz ceramic assemblages dated to Chub / Saquij I (Late Preclassic / Early Classic) phase.

Step categories	Acropolis	El Diablo	El Tejón
0	51%	50%	64%
1-2	46%	46%	33%
3-4	2%	1%	0%
5-6	1%	3%	3%

All of the ceramic material dated to Chub / Saquij I phase at El Diablo was excavated from the core of the complex. The peripheries, as outlined in Chapter 4, do not seem to have been settled before the Saquij II phase when the complex expanded beyond the main courtyard masonry structures. A large proportion – 37% – of El Diablo ceramic sample across all of Early Classic period was eroded, leaving a total of 3,211 diagnostic sherds used in the analysis. Of these, 833 were dated to the Chub and Saquij I phases and were found within contexts across 11 different locations around El Diablo complex, including temple F8-1, five of the main masonry structures within the core of the

compound (F8-2, 4, 5, 7, 8), two smaller platform structures (F8-12, 13), and under the floors of the Main Plaza.

Table 7.4 Summary of PSI scores calculated for individual structures of the Late Preclassic / Early Classic, Chub / Saquij I, occupation (excluding eroded sherds).

Complex Core/Periphery	Structure/Area	Number of sherds	PSI score
El Diablo Core	F8-1	267	1.363
	El Diablo Main plaza	204	0.686
	F8-2	94	0.787
	F8-4	69	1.275
	F8-13	50	1.620
	F8-12	40	0.625
	F8-8	34	1.294
	Diablo Looters' tunnels	27	1.630
	Diablo rubbish pit	20	1.200
	F8-5	18	1.778
	F8-7	10	1.400
El Tejón Core	H6-2	84	0.821
	North Courtyard, Stairway	2	2.000
Acropolis Core	L7-3	917	0.955
	L7-6	386	1.075
	L7-5	6	2.167
	L7-1	4	2.000
	L7-11	2	2.000
Acropolis Periphery	Northwest Courtyard Platform	582	1.203
	L7-17	3	2.000

The largest proportion (32%) of Saquij I ceramics was found in temple F8-1. Str. F8-1 was the most intensively excavated structure within the entire complex because of its unique and well-preserved stucco masks (Taube and Houston 2015, 209-229). It was additionally built atop the earliest tomb chamber found at the site to date, a burial of the first *Pa' Chan* dynasty ruler (Houston et al. 2015a, 21). The PSI result for temple F8-1 was high, at 1.363, which is consistent with other evidence of intensive elite presence

(Table 7.4). Almost all of the PSI results calculated for individual locations at the El Diablo complex were set well above 1 point, ranging from 1.275 (Str. F8-4) to 1.778 (Str. F8-5), (Table 7.4). Such high scores are a result of a large proportion (49%) of sherds scoring 2 and more steps during the analysis, with the main contributing ceramic types of Aguila Orange, Balanza Black, Pucte Brown, Dos Hermanos Red and Dos Arroyos Orange Polychrome. Only three locations had scores below 1: Str. F8-2 (0.787), units excavated at the El Diablo Main Plaza (0.686) and Str. F8-12 (0.625).

Some of the very high results cannot be taken at face value because of the low numbers of sherds excavated from some of the structures. Nevertheless, where sample size is large enough to allow for statistical analysis, the results indicate prominent presence of high-end ceramic vessels in the construction cores and rooms of the large masonry structures at El Diablo. A stark difference in PSI scores between Str. F8-2 (0.787) and other masonry structures with a similar amount of ceramics recovered, such as F8-4 (1.275), suggests Str. F8-2 might have been used for different activities than the other Main Plaza structures.

Chub / Saquij I ceramics at the Acropolis were found both within the core and on the periphery of the complex. The material was excavated from five structures within the complex core (Table 7.4) and from two locations outside the core – Str. L7-17 and from contexts beneath the Early Classic plaza floor (floor 1) which likely supports the Early Classic platforms of the centrally-located masonry structures of the Acropolis and extends beyond them (Newman and Menéndez 2012, 144). Even though the total number of diagnostic Chub and Saquij I ceramic fragments from the Acropolis, amounting to 1,900 sherds, is greater than that found at El Diablo, they were far less evenly distributed across the compound. Three of the five large masonry structures (L7-1, 5, 11) contained only 12 Chub / Saquij I sherds, whilst Str. L7-3 contained 48% of

the earliest Acropolis pottery (917 sherds), Str. L7-6 contained 20% (386 sherds) and the contexts under Plaza floors outside the core contained 31% (582 sherds). The PSI results calculated for the small samples from Strs. L7-1, L7-5, L7-11 are far higher (because of the high content of monochrome pottery scoring 2 steps) than the PSI results for the larger samples containing a greater variety of ceramic types. It seems the smaller the sample across different Acropolis structures, the higher the PSI score. This may indicate that the smaller samples represent activities particular to the finer pottery. In contrast, the larger samples would represent activities which did not require the use of fine pottery, activities which utilized the bulk of the undecorated or scarcely decorated pottery.

A closer look at the distribution of different vessel forms also suggests the pattern that different sized sample indicate different activities performed at different locations. Structures which contained larger ceramic samples (Strs. L7-3 and L7-6) contained 78% and 62% of closed vessel forms respectively. The open-form vessels constituted 20% (Str. L7-3) and 37% (L7-6) of these samples. In contrast, the small ceramic samples dated to Chub / Saquij I phases excavated from Strs. L7-1, L7-5, and L7-11 were composed in majority of open vessel forms – bowls, plates and vases (67%, 75% and 100% respectively).

The PSI results for the three Acropolis locations with largest Chub / Saquij I samples were highly varied. The PSI score for Str. L7-6 amounted to 1.075 and for L7-3 – 0.955, but the score from underneath the Plaza floors outside the core was the highest, at 1.203. The high result calculated for the Plaza location was caused by a relatively high number of various monochromes (for example, Aguila Orange – 33%, Dos Hermanos Red – 11%) found at the location, as opposed to the contexts of main masonry structures, where larger proportions of ceramics were unslipped pottery fragments

(Triunfo Striated - 40%, Quintal Unslipped – 12%) and the monochromes constituted a smaller proportion of the assemblage (for example, Aguila Orange – 23%, Dos Hermanos Red – 8%).

The excavations at El Tejón complex unearthed only 86 ceramic sherds dated to Chub and Saquij I phases. El Tejón was only discovered by the El Zotz Archaeological Project during the penultimate year of the Phase I excavations. Thus, the excavations at El Tejón were not as extensive as at other compounds, the excavation area was smaller and resulted in a smaller ceramic sample available for analysis. 98% of El Tejón sherds originated from Str. H6-2. The low overall PSI score for El Tejón complex of 0.849 was a product of a relatively high concentration (64%) of unslipped ceramic types, such as Quintal Unslipped and Triunfo Striated.

7.1.2. PSI for Saquij II phase (AD 400 – 550)

The amount of diagnostic sherds dated to Saquij II phase was far greater than the amount dated to the previous chronological phase and totaled 6,936 sherds. The PSI result calculated for the Acropolis complex is significantly higher than the results for the other Early Classic complexes calculated for both Saquij phases. With an overall score of 1.363, which is considerably higher than the Acropolis' earlier result and higher than both El Diablo and El Tejón, the Acropolis contained significantly more ceramics with higher decorative scores during the late phase of the Early Classic period. The results also show that scores for both El Diablo (0.959) and El Tejón (0.747) decreased towards the end of the Early Classic. Scores below one point show that the unslipped pottery (ceramic types with the scores of zero) formed the majority of the collections at El Diablo and El Tejón and were found in greater numbers than even the utilitarian monochrome ceramics (which score two or more points).

The distribution of different vessel forms within the analysed assemblages likewise shifted between Saquij I and Saquij II phases. The Acropolis sample contained significantly higher proportion of open-form vessels (39%) compared to El Diablo (25%) and El Tejón (17%) during Saquij II phase (Table 7.5). The distribution of closed vessel forms present a directly reverse pattern and their proportions decreased at the Acropolis (to 60%), and increased at both El Diablo (to 73%) and El Tejón (to 81%). Special forms, such as lids, incense burners or drums, also become more prominent at the Acropolis during this time period (Table 7.5). This pattern indicates that the group residing at the Acropolis complex might have enhanced their socio-economic presence at the site (higher PSI score) by offering big-scale consumption, feasting events to a larger population or more frequently (which would require greater volumes of open-form, serving vessels) compared to other El Zotz locations at the time.

Table 7.5 Forms of the ceramic sample of El Zotz dated to Saquij II phase.

Ceramic Form	El Diablo	El Tejón	Acropolis	El Diablo	El Tejón	Acropolis
Open form	151	18	190			
Bowl	350	24	650			
Plate	49	8	56			
Bowl/Plate	32	0	765			
Bowl/Vase	1	0	4			
Vase	5	0	6			
Open forms and vases	588	50	1,671	25%	17%	39%
Closed form	1,522	215	1,737			
Jar	196	16	862			
Olla	16	4	0			
Tecomate	0	0	2			
Closed forms	1,734	235	2,601	73%	81%	60%
Incense burner	6	0	1			
Lid	2	0	23			
Miniature	1	0	0			
Drum	0	1	1			
Special forms	9	1	25	0%	0%	1%
Unidentified	43	3	21	2%	1%	0%
Total	2,374	289	4,318			

Table 7.6 Proportions of sherds with different step scores in El Zotz ceramic assemblages dated to Early Classic Saquij II phase.

Step categories	Acropolis	El Diablo	El Tejón
0	40%	56%	64%
1-2	55%	41%	34%
3-4	3%	1%	0%
5-6	3%	2%	1%

The difference in distribution between decorated and undecorated ceramics was more prominent during the Saquij II phase than during the Saquij I phase (Figure 7.2). The Acropolis assemblage contained 60% of the ceramics scoring 2 or more steps, the El Diablo assemblage contained 44% and El Tejón – 36% (Table 7.6). Additionally, the Acropolis assemblage contained 3% of ceramics scoring 5 to 6 steps, the El Diablo assemblage contained 2% and El Tejón contained 1% (Table 7.6). Thus, the Acropolis assemblage dated to the Saquij II phase consisted of a majority of decorated ceramics with only 40% undecorated pottery (Table 7.6). The previously noticed pattern – that larger ceramic assemblages contain larger proportions of undecorated ceramics – does not apply to the shift in PSI results observed for the Acropolis during Saquij II phase. The Acropolis Saquij II sample is larger than the Saquij I sample, yet PSI results increased through time. At El Diablo, 56% of the ceramics scored zero points, which contributed to the low PSI score (Table 7.6). Thus, there appears to be a crucial shift in concentrations of ceramics scoring one or more steps from greater concentrations of decorated ceramics at El Diablo during the Saquij I phase to significantly increased proportions of decorated ceramics at the Acropolis in the Saquij II phase. Pottery concentrations from Saquij I to Saquij II at El Tejón scored similarly and PSI remained consistently lower than the scores for El Diablo and Acropolis.

Table 7.7 Summary of PSI scores calculated for individual structures of Early Classic Saquij II occupation (excluding eroded sherds).

Complex Core/Periphery	Structure/Area	Number of sherds	PSI score
El Diablo Core	F8-1	490	1.220
	F8-8	403	1.020
	F8-7	335	1.232
	Diablo Main plaza	267	0.584
	F8-2	121	0.926
	F8-4	92	1.207
	F8-12	63	0.603
	F8-5	37	0.541
	F8-13	10	1.600
El Diablo Periphery	F8-15	340	0.774
	F8-16	151	0.689
	F8-17	65	0.606
El Tejón Core	G6-1	268	0.731
	H6-2	14	1.357
	North Courtyard, Stairway	7	0.143
Acropolis Core	L7-3	1,768	1.255
	L7-6	1,312	1.316
	L7-2	247	1.623
	Courtyard 1	230	1.109
	L7-1	195	2.154
	L7-5	63	2.079
	L7-7	34	1.353
	Courtyard 2	3	2.667
	L7-11	1	2.000
Acropolis Periphery	Northwest Courtyard Platform	363	1.375
	L7-20	40	2.225
	L7-17	7	2.143

Saquij II ceramics were found at 12 locations around the core and the periphery of the Acropolis complex (Table 7.7). All the individual PSI scores calculated for each individual location were above 1 point; they ranged between 1.109 and 2.667. The distribution of Saquij II ceramics was however uneven across these 12 locations, similar to the uneven distribution of ceramic material representing the Chub and Saquij I

phases. The largest proportion of diagnostic Saquij II ceramics was found in Str. L7-3 (46% of Saquij II Acropolis sample). The same structure also yielded the largest ceramic assemblage dated to the Saquij I phase. Other relatively large portions of the Acropolis assemblage dated to the Saquij II phase came from Str. L7-6 (34%), from underneath plaza floors outside the complex core (9%), Str. L7-2 (6%), Courtyard 1 (5%) and Str. L7-1 (5%).

The high PSI scores recorded for all Saquij II Acropolis locations were a result of diversity in ceramic types and surface decoration. A relatively large proportion of the assemblage (6%) scored 3 to 6 steps. The ceramic fragments showed evidence of polychrome and bichrome painting as well as impressions, incisions and various other forms of surface decoration. Polychrome fragments of types such as Dos Arroyos Orange Polychrome, Caldero Buff Polychrome, or Yaloche Cream Polychrome constitute 3% of Saquij II ceramics at the Acropolis, which by far surpasses any previous or contemporaneous relative polychrome occurrence. Furthermore, 55% of Saquij II ceramics at the Acropolis was composed of plain monochrome pottery in a variety of colours, with the majority (66%) classified as the Aguila Orange ceramic type.

Saquij II ceramics were recovered from 12 locations in the El Diablo complex (Table 7.7). The pottery was distributed relatively evenly around the centre as well as the periphery of the compound. The small platform structures on the periphery of El Diablo, to the north of Str. F8-8, produced ceramics dated to the Saquij II phase; no earlier material was found outside the core of the complex. The ceramic sample from the newly settled area, from just three structures outside the complex core (F8-15, 16, 17), constitutes 23% of the Saquij II assemblage at El Diablo. The majority of the Saquij II ceramics from the El Diablo periphery was recovered from Str. F8-15, which

constituted 14% of the entire El Diablo Saquij II assemblage. However, the pottery from Str. F8-1 accounted for the largest proportion of El Diablo ceramics, at 21%. Ceramics from Str. F8-8 constituted 17%; from F8-7 constituted 14%, and the sample from the El Diablo Main Plaza area made up 11% of the El Diablo Saquij II assemblage.

The PSI results for individual locations at the El Diablo complex range from 0.541 to 1.600 (Table 7.7), which amounted to an overall low score for the entire architectural complex. All of the three centrally-located structures which produced the majority of the El Diablo assemblage (F8-1, 8, 7) returned scores above 1 point. Structure F8-1 is the temple of the complex, and Strs. F8-7 and F8-8 form a relatively closed, private architectural group in the northern part of El Diablo. All three structures left evidence of stucco façade decoration and appear to have been important buildings of public functions within the El Diablo complex. The distribution of fine ceramics around El Diablo reinforces the fact that these central masonry structures, where high-scoring ceramics accumulated, were still places of high importance even though the overall score at El Diablo decreased. Structure F8-2 returned a relatively low score, 0.926, which is similar to the low score recorded for the Saquij I phase for this structure. The contrasting PSI results between Str. F8-2 and the other large masonry structures at El Diablo support the hypothesis that Str. F8-2, situated next to the Solar Temple (F8-1), was used for different purposes than the other El Diablo structures such as F8-7 and F8-8.

In contrast to the centrally-located masonry structures at El Diablo, all of the three structures on the peripheries of El Diablo (F8-15, 16, 17) returned scores significantly lower than 1, ranging from 0.606 to 0.774 (Table 7.7). Out of 556 sherds excavated from the El Diablo periphery, only 16 fragments bore evidence of decoration of 3 or more decorative steps.

As mentioned previously, 56% of El Diablo pottery dated to the Saquij II phase scored zero on the decorative points scale; they were classified into Quintal Unslipped and Triunfo Striated ceramics types. A total of 40% of the El Diablo Saquij II assemblage consisted of plain monochromes, which scored two points; 68% of these monochromes were classified as Aguila Orange type pottery, 20% were classified as the Early Classic red types (Caribal Red and Dos Hermanos Red), 6% were of Balanza Black type, 6% were of Pucte Brown type. Out of the 32 diagnostic polychrome fragments which scored 6 steps, the great majority – 81% – were of Dos Arroyos Orange Polychrome type. Other polychrome types such as Yaloche Cream Polychrome and Caldero Buff Polychrome constitute a very small part of the assemblage.

At El Tejón, 289 ceramic sherds were dated to the Saquij II phase (Table 7.7). This is more than three times the amount of El Tejón sherds that were dated to Chub and Saquij I phases. 64% of the El Tejón Saquij II assemblage consisted of unslipped and undecorated pottery which scored zero steps (Table 7.6). This resulted in a very low PSI score for this small architectural complex, of 0.747. The majority (93%) of Saquij II ceramics was excavated from the construction core of Str. G6-1, which did not return any earlier (Chub or Saquij I) pottery. 66% of the ceramic assemblage from Str. G6-1 consisted of unslipped pottery; thus, the PSI score for this structure amounted to a low result of 0.731 (Table 7.7). The ceramics from Str. H6-2 constituted the majority of the El Tejón Saquij I assemblage and, similar to the Saquij II assemblage from Str. G6-1, it was composed of a majority (65%) of unslipped ceramic fragments. Structure H6-2 produced only 14 sherds dated to the Saquij II phase. The shift in distribution of ceramic material at El Tejón through time may signal a possible shift in activities from one part of the complex to another.

The ceramics scoring one or more steps constituted 36% of the El Tejón Saquij II assemblage. The majority of the decorated sample was composed of plain monochromes. A significant part of these monochromes, 58%, were classified as Aguila Orange, with 26% classified into Dos Hermanos Red and 10% classified into Pucte Brown. There were only three sherds exhibiting evidence of painted decoration. They were classified into Gavilan Black on Orange Bichrome and Caldero Buff Polychrome ceramic types. The ceramics from El Tejón did not exhibit the same level of pottery decoration in contrast to assemblages from El Diablo and the Acropolis. Therefore, this small architectural compound seems to have been occupied by different social and economic groups and / or has been used for vastly different purposes where the decorated ceramic items would not have accumulated in the same way as at El Diablo or at the Acropolis. It is also possible that the excavation strategy, and the fact that El Tejón was investigated for only one year of the project, affected not only the size but also the quality and composition of the ceramic sample.

7.1.3. PSI for Late Classic Mo' phase (AD 500 – 700)

There were 1,764 diagnostic sherds dated to the Mo' phase. This is a 75% decrease in the number of ceramic sherds available for the analysis compared to Saquij II phase. Three Mo' sherds were excavated at El Diablo and the rest of the sample was recovered from the Acropolis complex. As indicated by the chronological and spatial assessment of El Zotz, the hilltop complexes of El Diablo and El Tejón were abandoned at the beginning of the Late Classic period or at the end of the Early Classic. At this point, during the Mo' phase, the focus of El Zotz settlement was the central precinct of the site, where the Acropolis is situated. However, such small amounts of ceramics recovered dating to a chronological phase suggest significant economic and political changes taking place at the site. The spatial evaluation of the central precinct at El Zotz

indicates that there were construction works taking place in several locations at the site. Similarly, the political changes in the region suggest El Zotz would have enjoyed a period of sovereignty and prosperity. This is not reflected in the quantities of recovered material culture dated to this chronological phase. However, signs of significant economic wealth are visible at El Zotz through the quality of the excavated artefacts.

The PSI score for the Acropolis Mo' phase was 1.870, the highest recorded for any complex during any chronological phase. Such a result may indicate that this is a statistical anomaly and other factors need to be taken into account to assess the assemblage. It may also signal that the population occupying the Acropolis during the Mo' phase enjoyed prosperity and wealth which resulted in high accumulation of fine highly-scoring ceramics. The quantity of ceramics alone cannot explain such a high PSI score as a statistical anomaly as there were other complexes which returned even smaller quantities of ceramics but did not create this kind of result. Thus, it is the socio-economic and political circumstances of the Acropolis population, or the quality of Mo' archaeological contexts, that might be more explanatory of the unusual PSI result.

The frequencies of different vessel forms within the Mo' ceramic sample from the Acropolis indicates that this central locale combined to some extent the administrative, storage (perhaps resource accumulation) function with consumption, feasting activities. The proportion of closed-form vessels increased compared to the previous chronological phase (to 68%), (Table 7.8). The proportions of open-form vessels decreased (to 31%) yet they remained at a higher level than during the Chub/Saquij I phase (Table 7.8, Table 7.2).

Table 7.8 Forms of the ceramic sample of El Zotz dated to Mo' phase.

Ceramic Form	Acropolis	Acropolis
Open form	132	
Bowl	216	
Plate	66	
Bowl/Plate	123	
Bowl/Vase	11	
Vase	6	
Open forms and vases	554	31%
Closed form	915	
Jar	283	
Tecomate	5	
Closed forms	1,203	68%
Incense burner	2	
Lid	1	
Drum	1	
Special forms	4	0%
Unidentified	1	0%
Total	1,762	

Table 7.9 Summary of PSI scores calculated for individual structures of Late Classic Mo' occupation.

Complex Core/Periphery	Structure/Area	Number of sherds	PSI score
Acropolis Core	L7-1	1,447	1.930
	L7-6	146	1.712
	L7-5	108	2.009
	L7-2	59	0.475
	L7-3	1	6.000

Mo' phase ceramics were found across five of the Acropolis central structures and their distribution was similarly uneven as during the previous Early Classic phases. 82% of the assemblage was found in the construction cores of structure platform L7-1, 8% were found within construction cores of Str. L7-6, 6% within L7-5 (the restricted courtyard), 3% within L7-2 and one single sherd was found within the construction core of Str. L7-3 (Table 7.9). The sample is highly concentrated in the west and south of the complex,

which mirrors the locations of some of the biggest excavation units in the Acropolis compound. The structures which returned most Mo' phase sherds (L7-1 and L7-6) were the only two structures which had tunnels dug through their construction phases; the restricted courtyard (L7-5) had a deep unit dug vertically through the sequences of construction phases and floors. Because of the ways the later Caal phase construction projects on top of the earlier structures augmented the size of the Acropolis, only deep excavation units were likely to recover any of the earlier phases of occupation.

All but one of the PSI scores dated to Mo' contexts at the Acropolis were above the score of one. The assemblage from Str. L7-2 scored 0.475 whilst the scores for the other structures ranged from 1.712 to 2.009 (Table 7.9). I have excluded the score for Str. L7-3 where a single sherd scored 6 points and therefore resulted in the PSI score of 6.000. The high scores were a result of high content of decorated ceramics. Only 42% of Mo' phase ceramics from the Acropolis assemblage scored zero points (the unslipped and undecorated ceramic types), (Table 7.10). This means that the majority of sherds, 58%, showed evidence of at least one decorative step.

Table 7.10 Proportions of sherds with different step scores in El Zotz ceramic assemblages dated to Late Classic Mo' phase.

Step categories	Acropolis
0	42%
1-2	39%
3-4	0%
5-6	18%
7-8	0%

There were 30 ceramics types and varieties recovered from the Mo' contexts, a relatively high number considering the small sample size. Such great variety in ceramic types might have contributed to the overall increase in the number of steps recorded for

the assemblage. Of these sherds, 39% scored two points of which the majority are undecorated monochromes. Whilst there were 11 different ceramic type-varieties scoring two points, 78% of these sherds were classified as Tinaja Red type. Other prominent monochrome types were Maquina Bown, Azote Orange and Infierno Black. Of the Acropolis Mo' ceramics, 16% scored 6 points, of which the majority are polychromes. Five different type-varieties scored 6 points, but 91% of these were classified as Saxche-Palmar Orange Polychromes and a further 6% were classified as Zacatal Cream Polychromes. Thus, even though there were many ceramic types recorded within the Mo' sample, the bulk of the assemblage was relatively uniform and classified into only a few types. A great number of Mo' phase types and varieties appear in very small frequencies in the assemblage.

The Mo' phase is the first chronological phase to contain a ceramic type scoring seven points (a polychrome manufactured with a resist technique), (Table 7.10, Figure 7.3, Figure A.32, Figure A.33). The indication is that vessels with more varied decorative techniques were reaching El Zotz consumer markets during the Late Classic period. Unfortunately, it is unclear from the current analysis whether these vessels were produced locally or whether some of the specimens were traded or gifted from other Maya centres. It is likely that distribution across all of the exchange networks – trade of locally-produced goods, inter-site trade, and gift-giving – took place at El Zotz as new political and economic powers were established in the Petén region at the time (as discussed in Chapter 2; Sharer and Traxler 2006). The regional and local political and economic changes might have influenced the traditions of accumulation of goods and therefore might have contributed to the increase in PSI score calculated for the beginning of the Late Classic period.

7.1.4. PSI for Late Classic Caal phase (AD 700 - 850)

The diagnostic assemblage for the Caal phase was far larger than assemblages dated to any of the previous chronological phases and amounted to 10,106 sherds distributed across three complexes: the Acropolis, Las Palmitas and Group K. Some ceramic material deposited in the large Caal construction cores was stylistically dated to earlier chronological phases at El Zotz. However, whenever classification allowed, ceramic fragments from earlier phases were excluded from the below analysis. No Caal phase sherds were found in El Diablo or El Tejón. The Acropolis complex returned the largest Caal sample and constituted 60% of the diagnostic Caal assemblage. Las Palmitas produced 28% of the assemblage and 12% was recovered from Group K structures.

Table 7.11 Proportions of sherds with different step scores in El Zotz ceramic assemblages dated to Late Classic Caal phase.

Step categories	Acropolis	Group K	Las Palmitas
0	49%	61%	67%
1-2	37%	29%	27%
3-4	1%	1%	1%
5-6	13%	9%	5%
7-8	0.21%	0.16%	0.04%

The PSI result for the Caal period Acropolis is substantially higher, at 1.550, than the other results calculated for the El Zotz Caal assemblages. The second highest PSI score for the Caal phase was recorded for pottery from Group K and amounted to 1.132. This PSI is higher than, for instance, the result calculated for El Diablo for the Chub/Saquij I phase (1.116) which was the highest score for early phase of the Early Classic time period. Thus, the concentration of highly-scoring ceramics during the Late Classic period is much higher than during the Early Classic. Las Palmitas scored the lowest during the Caal phase (0.872). These scores were affected by the proportions of two step

category groups: the proportions of ceramics scoring zero steps (unslipped and undecorated pottery) and those scoring 5-6 steps (bichrome and polychrome pottery types). The Acropolis contained 49% unslipped, undecorated pottery and 13% of ceramics scoring 5-6 steps (Table 7.11, Figure 7.4). By comparison, the Group K Caal assemblage contained 61% unslipped, undecorated sherds and 9% bichrome and polychrome ceramics; Las Palmitas contained 69% of undecorated and 5% of bichrome and polychrome ceramics (Table 7.11, Figure 7.4). Thus, the great majority of the decorated and high-scoring pottery was recovered from the central precinct, especially from the Acropolis complex.

The distribution of different vessel forms during the Late Classic Caal phase follows closely the patterns exhibited by the PSI scores for El Zotz complexes. The ceramic sample recovered from the Acropolis complex, a complex with the highest PSI score, contained proportionately more open-form vessels (27%) and less closed-form vessels (71%) than Group K (20% open forms to 80% closed forms) or Las Palmitas (15% open forms to 84% closed forms), (Table 7.12). However, when compared to earlier time periods, the relative quantities of closed vessel forms are higher during the Caal phase across El Zotz complexes in general. This might signal an overarching trend of accumulating larger volumes of resources at various higher and lower elite locations across the site which would require greater quantities of closed-form, storage (and transportation) containers. Perhaps there was an intensification of trade and exchange of perishable goods at El Zotz or of tribute and tax collection during this time. An increase in population would also be an important contributing factor to the growth of accumulated resource at a site.

Table 7.12 Forms of the ceramic sample of El Zotz dated to Caal phase.

Ceramic Form	Acropolis	Las Palmitas	Group K	Acropolis	Las Palmitas	Group K
Open form	603	193	68			
Bowl	590	159	131			
Plate	152	50	27			
Bowl/Plate	257	10	17			
Bowl/Vase	14	4	1			
Vase	21	12	3			
Open forms and vases	1,637	428	247	27%	15%	20%
Closed form	3,412	2,112	831			
Jar	832	221	122			
Olla	1	26	6			
Tecomate	36	23	12			
Closed forms	4,281	2,382	971	71%	84%	80%
Incense burner	12	1	0			
Lid	2	0	0			
Drum	6	2	0			
Special forms	20	3	0	0%	0%	0%
Unidentified	118	18	2	2%	1%	0%
Total	6,056	2,831	1,220			

Table 7.13 Summary of PSI scores calculated for individual structures of Late Classic Caal occupation (excluding eroded sherds).

Complex Core/Periphery	Structure/Area	Number of sherds	PSI score
Acropolis Core	L7-1	1,715	1.875
	L7-6	939	1.747
	L7-11	895	1.604
	L7-5	635	1.835
	L7-7	158	1.690
	L7-2	130	2.769
	Courtyard 2	6	1.000
	L7-3	1	2.000
Acropolis Periphery	L7-20	1,482	0.772
	L7-17	66	1.606
	Plaza	28	1.571
Las Palmitas Core	M3-9	616	0.765
	Palmitas Looters' tunnels	563	0.911
	M3-6	425	1.158
	M3-7	291	0.997

Complex Core/Periphery	Structure/Area	Number of sherds	PSI score
	M3-1	266	0.632
	Palmitas West Courtyard	205	0.932
	M3-4	119	0.580
	M3-11	74	0.635
	M3-3	56	1.232
	M3-5	55	0.673
	M3-8	52	0.712
	Palmitas East Plaza	19	0.421
	M3-2	9	1.111
Las Palmitas Periphery	M3-15, rubbish pit	68	0.853
	South Platform	8	0.625
	Surface collection	5	0.800
Group K Core	K8-8	512	1.670
	K8-3	355	0.789
Group K Periphery	West Courtyard	353	0.697

Caal phase ceramics were found at 11 locations around the Acropolis, at eight locations at the centre of the complex and at three locations on the peripheries of the complex (Table 7.13). From the total of 6,055 diagnostic sherds recovered from the Acropolis, 74% were excavated from the centrally-located structures and 26% from the complex peripheries. The largest samples came from Str. L7-1 (28% of the Caal Acropolis assemblage), L7-20 in the North-West Courtyard (24%), L7-6 (16%), L7-11 (15%) and L7-5 (10%), (Table 7.13). The presence of Caal phase ceramics is more prominent at the Acropolis than the ceramics dated to previous chronological phases. A greater number of structures at the Acropolis contained assemblages of more than 100 sherds dated to the Caal phase than assemblages dated to any of the previous time periods.

The PSI scores for individual structures at the core of the Acropolis range from 1.000 to 2.769 and on the peripheries from 0.772 (Str. L7-20) to 1.606 (Str. L7-17), (Table 7.13). Two structures which scored very highly – over two points (Structures L7-2 and L7-3) – both contained very few sherds when compared to the other structures. However, even

the structures which returned high quantities of sherds at the Acropolis centre scored well above one point on the PSI scale: Str. L7-1 scored 1.875, Str. L7-6 scored 1.747, Str. L7-5 scored 1.835. The largest assemblage from the Acropolis periphery, from Str. L7-20, in contrast, scored 0.772. Thus, there is a visible presence of highly decorated ceramics at both the centre and the peripheries of the Acropolis; however, the peripheries contained proportionately fewer of the highly scoring pottery.

The above results must be assessed through the impact of construction activities taking place at El Zotz during the second half of the Late Classic period. The construction events discovered at the Acropolis not only augmented the size of the architectural compound itself, but also considerably increased the amount of ceramic material recovered. The high score for the Acropolis Caal collection was probably a result of the good preservation conditions of sealed contexts of large platform cores and the high number of sherds of the decorated ceramic types. The dense concentration of ceramics is likely indicative of nearby presence of rich deposits, full of discarded ceramics including polychromes and elaborately decorated vessels, which were used for the creation of the Acropolis platform cores. There is evidence of material dated to earlier chronological phases as well as weathering to some of the ceramic fragments indicative of possible re-deposition of the material (from refuse deposits to construction cores). Most often, when detecting an increase in ceramic refuse associated with domestic and utilitarian activities, such as cooking, it is expected to see an increase in the proportions of unslipped and low-count decorated ceramic sherds. The relatively large proportion of highly scoring ceramic types (in majority polychromes) in a deposit of the nature found at the Acropolis suggests that the activities leading to the discard of these vessels were less likely to be utilitarian or domestic in nature and more likely to have involved non-utilitarian and possibly elite public activities.

The Caal collection at the Acropolis returned the largest variety of ceramic type-varieties compared to the previous chronological phases. The large assemblages dated to earlier time periods (at the Acropolis and El Diablo) contained from 30 to 36 ceramic type-varieties. The Acropolis Caal phase assemblage contained 44 type-varieties, including 14 bichrome and polychrome types. The largest category of decorated ceramics is the category containing the monochrome slipped type-varieties, at 2,199 ceramic sherds. Even though there were nine different monochrome types identified within this group, the great majority of ceramics (81%) was classified as the Tinaja Red type with low quantities of other monochrome types, such as Maquina Brown (8%), Infierno Black (5%), Azote Orange (5%). There are eight different bichrome and polychrome types scoring 6 decorative points, but the majority of sherds were classified as Saxche-Palmar Orange Polychrome (78%) with other painted types found in much lower quantities. 18% of ceramics were classified into Zacatal Cream Polychrome and 3% into Paixban Buff Polychrome with other type-varieties having only a handful of specimens. Thus, similar to the Mo' phase, even though there is a significant diversity in identified ceramic types, the bulk of the assemblage is classified into only a few well-represented categories.

In total, 1,220 Caal pottery sherds were found at the three sampled locations at Group K. The ceramic assemblage was relatively evenly distributed across the three locations: 42% of sherds were found in the contexts of Str. K8-8, 29% in the contexts of Str. K8-3 and 29% around the group Platform on the periphery of the complex (Table 7.13). Two of the three locations within the complex returned individual PSI scores well below one point: Str. K8-3 scored 0.789, and the Platform units scored 0.697 (Table 7.13). The relatively high PSI score of 1.132 for the whole complex was a result of a high decorative content of the most abundant ceramic sample within the group; Str. K8-8

scored a PSI of 1.670 (Table 7.13). Thus, the majority of the highly decorated ceramics at Group K were concentrated in the contexts of Str. K8-8 and increased the overall PSI score for the complex. The assemblage excavated from Str. K8-8 contained 38% of sherds scoring 1-2 steps (mostly slipped monochrome vessels) and 14% of sherds scoring 5-6 steps (mostly polychromes). In contrast, Str. K8-3 contained 20% of sherds scoring 1-2 steps and 6% of sherds scoring 5-6 steps; the assemblage recovered from the Platform deposits contained 24% of sherds scoring 1-2 steps and 3% of those scoring 5-6 steps.

The differences between the assemblages recovered from different structures can be a result of the quality of archaeological contexts, which were likely affecting the preservation levels of excavated material. Similarly, the location of excavation units on top and around the structure platforms likely affected the quantities and preservation levels of the recovered sherds. However, the differences could also have been driven by the variations in the functions of structures within the group which would have led to deposition of distinctive ceramic collections.

Similar to the assemblage from the Acropolis, the majority (76%) of the monochrome pottery (which scored two steps) found at the Group K complex was classified as Tinaja Red. The proportion of Tinaja Red sherds was greater at the Acropolis Caal contexts than at Group K; however, the combined quantity of the red and orange ceramics was proportionately larger in the Group K Caal contexts than at the Acropolis. Both red (Tinaja Red) and orange (Azote Orange) types constituted 89% of Group K sherds and 86% of the Acropolis sherds. Brown (Maquina Brown) and black (Infierno Black) types were found proportionately more frequently at the Acropolis (8% and 5% respectively) than at Group K (6% and 4% respectively). Thus, the ceramic samples from two central complexes at El Zotz, Acropolis and Group K, not only differed in their composition of

painted to unslipped ceramic types but also exhibit a level of variations in accumulation of specific types of monochrome ceramics (black versus red). The potential significance of these differences is assessed further in this chapter.

The Group K Caal ceramic sample which scored 6 decorative steps (polychrome vessels) was classified into three different type-varieties as opposed to eight type-varieties found at the Acropolis complex. Of the polychromes, 96% was classified as Saxche-Palmar Orange Polychrome. There were only three sherds of Zacatal Cream Polychrome type and one sherd of Paixban Buff Polychrome. Thus, the monochrome assemblage of the Group K complex was dominated to a greater extent by the red and orange types, and the polychrome assemblage was almost exclusively composed of orange polychromes, compared to the Acropolis sample. The Acropolis assemblage, which was significantly larger in quantities of diagnostic sherds, contained proportionately more of the darker ceramic types (especially Infierno Black type), more of the non-orange polychromes, and was overall much more typologically diverse than the Group K ceramic sample.

The Las Palmitas assemblage dated to the Caal phase (2,831 diagnostic sherds) was found in contexts of 15 locations within the complex: in contexts of 13 structures, plazas or open spaces in the centre of the group and in 2 locations on the peripheries of the complex. A staggering majority (97%) of the assemblage was located in the centre of the complex with few Caal phase ceramics found on the peripheries. The majority of the Caal material was excavated from contexts excavated around the Las Palmitas temple and the large masonry structures. 76% of the Caal phase ceramics were recovered from contexts from Strs. M3-9, M3-6, M3-7, M3-1 and the various investigated looter's tunnels within large masonry structures (Table 7.13).

Individual PSI scores for Las Palmitas assemblages from different structures and locations range from 0.421 to 1.232 (Table 7.13), a range that is significantly lower in value than the results calculated for the central precinct complexes (Acropolis and Group K). Only three locations returned results above one point, very few when compared to ten locations scoring a PSI above 1 at the Acropolis. Some of the higher scores at Las Palmitas were calculated for locations with small samples, and small samples tend to be less reliable as manifested in other analysed assemblages. Nonetheless, the two patio group structures, M3-6 and M3-7, returned the 2nd and the 4th highest PSI score for the complex, 1.158 and 0.997 respectively (Table 7.13). The assemblage from Str. M3-6 contained the largest proportion of ceramics scoring 5-6 decorative steps (9%) and Str. M3-7 contained 7%. Temple M3-1 and the smaller structure adjacent to the patio group, M3-9, scored significantly lower results of 0.632 and 0.765 respectively (Table 7.13). These two structures scoring low PSIs both contained only 3% of the highly decorated pottery (of 5-6 steps). Such low scores, and the overall low score for the complex of 0.872, are a result of large proportion of the sample (94%) scoring between zero and two decorative steps, with only 6% of sherds having decorative attributes beyond the monochrome slipping. The individual PSI scores for each location seem to be directly related to the proportions of sherds scoring 5-6 decorative steps (bichromes and polychromes); the larger the frequency of sherds scoring 5-6 steps, the higher the PSI score.

There was a total of 31 different ceramic type-varieties identified in the Las Palmitas Caal assemblage. This is 30% less than was found at the Acropolis, but 24% more than at Group K during the Caal phase. Thirty to 31 diagnostic type-varieties was a fairly standard number within an assemblage analysed for this research and was observed for most of the Early Classic samples at El Zotz. Out of the seven ceramic type-varieties

scoring two steps, the majority of the assemblage was classified into Tinaja Red (73%) and Azote Orange (8%). The proportions of red and orange ceramics are, however, smaller than was observed in collections from the central precinct. Black and brown slipped types, such as Infierno Black and Maquina Brown, types constitute a larger proportions of the Caal monochrome assemblage at Las Palmitas (17%) than at the Acropolis and Group K, 14% and 12% respectively. The ceramic assemblage scoring 6 steps at Las Palmitas was found in similar proportions as in the other Late Classic complexes: Saxche-Palmar Orange Polychrome type constitutes the majority (85%), Zacatal Cream Polychrome is the second most abundant painted polychrome type (10%) with other types being significantly less frequent. Nevertheless, the monochrome pottery suggests that the composition of the Las Palmitas assemblage during the Caal phase was different to those of the central precinct complexes, in addition to scoring a markedly lower PSI result.

The PSI score above one point for Group K – a relatively high score for a small compound with little architectural evidence of elite presence – is likely reflecting the wide presence of highly decorated pottery objects within the entire central precinct at El Zotz. The relative proximity of the two areas means the two compounds, the Acropolis and Group K, likely shared spheres of distribution of various objects. It is thus not surprising that the compounds showed certain similarities in their assemblage features, at least on a general level. This would also explain the lower PSI score and different monochrome composition found at Las Palmitas, which is located at a distance from the central part of the site. The Caal phase contexts at Las Palmitas returned relatively low quantities of Caal ceramic material (2,831 sherds) in comparison to the Acropolis complex (6,055 sherds) even though Las Palmitas is classified as large complex with tall-terraced platform structures and signs of elite architecture. The newly established

settlement area in the northern part of at El Zotz – Las Palmitas and the neighbouring complex of La Tortuga – did not contain the same frequency of high-end, highly decorated ceramic material as the central precinct complexes during the Late Classic period.

7.1.5. PSI for Terminal Classic Cucul phase (AD 850 - 980)

The Cucul phase presents a completely different picture of pottery decoration at El Zotz with all of the average PSI results decreasing in comparison to the earlier Caal phase. The results of Cucul phase PSI analysis provide the only instance when all PSI scores for architectural complexes fell below 1.000 point. The results show a general overall decrease of investment in ceramic surface decoration. However, the Cucul ceramic assemblage is the largest assemblage analysed in this study of El Zotz pottery and it might be that the decrease in overall PSI compared to the Caal phase is influenced by better preservation of the utilitarian ceramics which were recovered in far greater numbers. Out of all the relatively low PSI scores, Las Palmitas ranked the highest (0.852), followed by Group K (0.771) and the Acropolis (0.766). These scores are some of the lowest out of all chronological phases investigated in the current research (the only lower score was recorded for the El Tejón complex and dates to Saquij II phase).

The concentration of closed-form vessels is the highest out of all of the chronological phases. The Acropolis ceramic sample which obtained the lowest PSI score contained the biggest proportion of closed-form vessels and smallest proportion of open-form pots (86% to 13%), (Table 7.14). Such a pattern is in line with the trends observed for ceramic samples dated to previous time periods at El Zotz. Interestingly, both Las Palmitas and Group K complexes contained identical proportions of different ceramic forms – 84% of closed forms and 16% of open forms (Table 7.14). Thus, the hierarchy of PSI scores and the ratios of closed to open-form vessels reversed in tandem during

the transition from the Late to Terminal Classic period. Las Palmitas and Group K complexes return higher PSI results and contain proportionately larger quantities of serving vessels during the Cucul phase compared to the Acropolis household (which was exhibiting more wealth during the preceding Late Classic Caal phase). This shift in distribution of vessel forms across El Zotz complexes between the Late and Terminal Classic periods further supports the hypothesis that the Petén region was undergoing significant social, economic and political changes during this time.

Table 7.14 Forms of the ceramic sample of El Zotz dated to Cucul phase.

Ceramic Form	Acropolis	Las Palmitas	Group K	Acropolis	Las Palmitas	Group K
Open form	444	214	61			
Bowl	320	339	87			
Plate	49	47	6			
Bowl/Plate	533	18	2			
Bowl/Vase	42	4	2			
Vase	62	23	1			
Open forms and vases	1,450	645	159	13%	16%	16%
Closed form	7,613	3,041	717			
Jar	1,497	318	101			
Olla	0	52	1			
Tecomate	149	61	12			
Closed forms	9,259	3,472	831	86%	84%	84%
Incense burner	11	0	0			
Lid	2	0	0			
Drum	16	2	0			
Special forms	29	2	0	0%	0%	0%
Unidentified	58	14	1	1%	0%	0%
Total	10,796	4,133	991			

With the exception of the Mo' phase assemblage, the ceramic assemblages of El Zotz were consistently increasing in volume through time (each chronological phase produced more ceramic material than the previous phase, but less than the following phase). The Cucul ceramic assemblage was over 33% larger than the assemblage of the Caal phase. The Cucul phase ceramics were distributed across the three architectural

compounds in a highly uneven pattern. The Acropolis sample, which scored the lowest PSI, amounted to 10,795 sherds. This is more than the entire diagnostic Caal phase collection excavated across all three Late Classic complexes (10,106 sherds). It is also 2.5 times larger than the Cucul sample recovered from Las Palmitas (4,132 sherds). The Las Palmitas Cucul assemblage is in turn 4 times as large as the one recovered from Group K (991 sherds). Similar to the Caal phase results, the Cucul PSI scores for assemblages from the Acropolis and Group K are similar, with the Las Palmitas score different to any other result.

Table 7.15 Summary of PSI scores calculated for individual structures of Terminal Classic Cucul occupation (excluding eroded sherds).

Complex Core/Periphery	Structure/Area	Number of sherds	PSI score
Acropolis Core	L7-1	3,796	0.953
	L7-5	1,911	0.929
	L7-6	187	1.299
	L7-3	79	1.658
	L7-2	49	2.163
Acropolis Periphery	L7-20	2,408	0.544
	L7-17	1,713	0.523
	Northwest Courtyard Platform	652	0.296
Las Palmitas Core	Palmitas rubbish pit	2,550	0.760
	M3-9	815	0.899
	M3-5	521	0.800
	M3-7	181	1.785
	M3-4	25	1.480
	M3-8	12	1.417
	Palmitas West Plaza	9	2.000
	Palmitas Looters' tunnels	8	2.000
	M3-1	5	2.000
	M3-6	5	2.000
	M3-11	1	2.000
Group K Core	K8-8	573	0.770
	K8-3	250	0.792
Group K Periphery	West Courtyard	168	0.744

The large Cucul assemblage from the Acropolis was found within contexts across five structures in the complex centre and three locations on the peripheries (Table 7.15). Fifty-six percent (56%) of the assemblage was found within the complex core and 44% in the peripheral contexts. This is the only assemblage found at the site which exhibits such a high proportion of material culture recovered from peripheral contexts relative to the core of the complex. The distribution of the Acropolis sample is highly uneven across the Cucul contexts. This is because the Terminal Classic ‘ritual’ or ‘termination’ deposit, which was intensely investigated, was significantly richer in ceramic material than other Cucul contexts at the Acropolis. Thirty-five percent (35%) of the Acropolis Cucul assemblage was found in contexts of Str. L7-1 and a further 18% was excavated from the restricted patio, L7-5. Both of these locations have a well-documented presence of the special ‘termination’ deposit which was rich in ceramic remains. Furthermore, 22% of the Cucul sample was found in contexts of Str. L7-20 and 16% in Str. L7-17 on the peripheries of the grand Acropolis structures, in the Northwest Courtyard. Only 9% of the whole assemblage was found at other locations within the compound.

The individual PSI scores for the Acropolis structures ranged from 2.163 to as little as 0.296 (Table 7.15), which is the widest recorded PSI range at El Zotz. The higher PSI scores, above 1 point, were calculated exclusively for the smaller assemblages. All of the larger samples listed above (found in contexts of Strs. L7-1, L7-5, L7-20 and L7-17) scored a PSI below 1 point (Table 7.15). This means that a large proportion of the ceramic material in large assemblages was composed of unslipped, undecorated utilitarian material and relatively small quantities of highly decorated vessels. In total, 66% of Acropolis Cucul ceramics was undecorated, 31% scored one to two points and consisted of a majority of slipped monochromes. Only 3% of the ceramic assemblage

scored three to seven production-step points (Table 7.16, Figure 7.5). Even though all four of the larger Acropolis assemblages (from Strs. L7-1, L7-5, L7-20, L7-17) scored relatively low PSI results, there is a visible difference between the assemblages found in the complex centre and those excavated on the peripheries. The Cucul assemblages in the centre of the complex scored PSI results of 0.953 (at L7-1) and 0.929 (at L7-5), while assemblages on the peripheries scored significantly lower PSIs of 0.544 (at L7-20) and 0.523 (at L7-17), (Table 7.15).

Table 7.16 Proportions of sherds with different step scores in El Zotz ceramic assemblages dated to Terminal Classic Cucul phase.

Step categories	Acropolis	Group K	Las Palmitas
0	66%	65%	64%
1-2	31%	32%	31%
3-4	1.70%	0.91%	1.31%
5-6	1.57%	1.72%	3.34%
7-8	0.04%	0.00%	0.02%

The variety of ceramic type-varieties found in Cucul phase contexts is even greater than that found within the Mo' phase contexts and totaled 49 different ceramic types. The largest proportion of decorated pottery was classified into monochrome types which scored 2 decorative steps. Of these, 87% were classified as Tinaja Red, which is a much larger proportion when compared to previous chronological phases. The next most frequently found ceramic types were Infierno Black, which constituted 6% of the monochrome sample, and Maquina Brown which constituted 3%.

The ceramic group scoring 6 decorative steps was classified into six different type-varieties of bichromes and polychromes. The most abundant polychrome type was Saxche-Palmar Orange Polychrome, which constitutes 48% of the polychrome sample. The Palmar Orange Polychrome type constituted 24% of the sample and Zacatal Cream

Polychrome type, 22%. Such polychrome composition is different to those of other El Zotz collections from other archaeological phases. In other El Zotz assemblages, one orange polychrome type constituted an overwhelming majority of the painted pottery and other types were found in relatively small quantities. In the case of the Acropolis Cucul phase assemblage, there is still one dominant orange polychrome type; however, other ceramic types are found in higher frequencies and in greater proportions compared to previous chronological phases.

Even though the overall PSI result for the Acropolis Cucul sample is relatively low and indicates there were small quantities of highly decorated vessels, there were some exquisite objects which exhibited elaborate surface decoration. The Acropolis Cucul phase sample is the only assemblage to contain sherds which scored eight decorative steps, the highest score recorded in the current analysis. Therefore, the emerging pattern suggests that the overwhelming majority of the Cucul ceramic material was of low decorative sophistication; but there was a much wider range of ceramic type-varieties. There was additionally the largest difference between the highest and lowest PSI scores calculated for individual architectural structures and the biggest difference between the lowest and the highest step-scoring ceramic type (zero steps to eight steps). The decorated vessels might have become rarer and less frequently found but they were more varied, with single specimens exhibiting levels of decoration not found in any of the previous chronological phases.

The majority of the Group K Cucul assemblage was found in the contexts of and around Str. K8-8 (58%), (Table 7.15). A further 25% of the ceramic material was found in contexts of Str. K8-3 and the remaining 17% was excavated from the cores of the platform around the Group K compound (Table 7.15). The individual PSI scores for Group K had a relatively narrow range, from 0.792 at Str. K8-3, 0.770 at K8-8, and

0.744 on the peripheries of the complex (Table 7.15). Thus, the overall low PSI result for the whole compound is composed of low individual results for all of the analysed locations at the complex. These scores are lower than the ones calculated for the Acropolis centrally-located structures, but higher than the PSI results for the Acropolis peripheral locations.

There were proportionately fewer sherds scoring three decorative steps and above at Group K (2.6%) than at the Acropolis (3.3%), (Table 7.16). There was only one polychrome type (Saxche-Palmar Orange Polychrome) which scored six decorative steps, which also represents the highest number of decorative steps classified in the Group K Cucul phase sample. However, there were slightly more sherds scoring one and two decorative steps in comparison to undecorated pottery at Group K (32% minimally decorated ceramics to 65% undecorated) than at the Acropolis (31% to 67%), (Table 7.16). The majority of the monochrome pottery, as is the case with other complexes, was classified into Tinaja Red (83%) with a further 7% classified as Azote Orange and 5% as Infierno Black. Thus, even though the highly decorative pottery was less frequently found at Group K, the minimally decorated pottery was relatively more abundant than at the Acropolis.

A large proportion of the Cucul assemblage recovered from the Las Palmitas complex was excavated from the rubbish pit deposits found below the northern edge of the patio group platform and amounted to 2,550 sherds, or 62% of the sample. There were additionally only three structures, out of a total of ten locations, which returned a sizable sample size: M3-9 (20%), M3-5 (13%) and M3-7 (4%), (Table 7.15).

The individual PSI scores for Las Palmitas structures range from 2.000 points, calculated for the smaller samples composed of monochrome vessels, to 0.760

calculated for the rubbish pit deposit (Table 7.15). Two of the larger-sized samples (from Strs. M3-9 and M3-5) scored PSI results below one point. The exception is the patio group Str. M3-7, which scored a relatively high PSI result of 1.785 (Table 7.15). The overall high PSI score for the Las Palmitas complex compared to the other compounds is a result of a proportionately large amount of ceramics scoring three or more decorative steps (4.7%) and a lower proportion of undecorated pottery (64.4%), (Table 7.16). The biggest difference relative to the other compounds is visible in the ceramic groups scoring 5-6 steps (3.3% as opposed to 1.6% at the Acropolis and 1.7% at Group K, Table 7.16). The majority of the vessel sherds scoring six steps were classified into the Saxche-Palmar Orange Polychrome ceramic type (78% of all polychromes). A further 20% of polychromes were Zacatal Cream Polychrome. There are 44 ceramic types recorded for the Las Palmitas Cucul assemblage; yet, similar to other Late and Terminal Classic assemblages, the largest proportion of ceramics was classified into monochrome types (of which Tinaja Red constituted 76%) and polychromes. The sherds classified into other ceramic types were found in small samples or as single sherds across the whole collection. This pattern is the same as observed in assemblages from the central precinct of El Zotz.

7.1.6. PSI for Early Postclassic Choc phase (AD 980 - 1250)

The Early Postclassic Choc phase ceramics were found mainly in the humic and subhumic layers of the excavation units. The preservation rate within these contexts is generally poor and the ceramic material has been subjected to heavy erosion, mixing, displacement and fragmentation. The diagnostic sample dated to the Choc phase at El Zotz came from excavations of the three complexes: the Acropolis, Group K and Las Palmitas. The sample is the smallest recorded during the analysis. A total of 497 ceramic sherds diagnostic of the Choc phase was found across all of the architectural

compounds. This is 71% fewer sherds than in the next smallest diagnostic assemblage, which was dated to Mo' phase. Thus, the Choc sample constituted only a fraction of the entire analysed ceramic material. The small sample size is likely less reliable than some of the other much larger assemblages.

Table 7.17 Summary of PSI scores calculated for individual structures of Early Postclassic Choc occupation (excluding eroded sherds).

Complex Core/Periphery	Structure/Area	Number of sherds	PSI score
Acropolis Core	L7-1	26	1.846
	L7-2	7	0.000
	L7-6	3	2.000
	L7-5	3	0.667
	L7-7	1	0.000
Acropolis Periphery	L7-20	97	1.918
	Plaza	55	2.000
	L7-17	50	1.680
Las Palmitas Core	Palmitas rubbish pit	114	0.842
	M3-9	46	1.609
	M3-5	28	1.571
	M3-7	20	0.100
	M3-4	16	0.125
	M3-1	10	0.400
	M3-6	4	0.000
	M3-2	3	0.000
	M3-8	1	0.000
	M3-3	1	0.000
	Palace patio	1	0.000
Group K Core	K8-8	4	2.000
	K8-3	2	1.000
Group K Periphery	Platform	5	0.400

The diagnostic Choc sample was found in five of the analysed areas across three complexes: in the Acropolis centre, in the Acropolis peripheries, in the Las Palmitas centre, in the Group K centre and in Group K's peripheries. The distribution of the material across these five areas was highly uneven and 90% of the sherds were

recovered from two areas: the Acropolis peripheral structures (the Northwest Courtyard, Str. L7-17 and L7-20) and from the Las Palmitas central structures (Table 7.17). Only 51 sherds in total were found outside these two locations and their quantity is too small for a comparative statistical analysis.

PSI results of the Choc phase for the three complexes are higher than those calculated for the Cucul phase. The Acropolis scored the highest, 1.802. This is the second highest result observed during the analysis. It is lower only in comparison to the Mo' phase result of 1.870, which was calculated for a similarly small ceramic sample. The second highest PSI result was calculated for Group K (1.091) with the lowest score calculated for Las Palmitas (0.910). Even though the PSI scores observed for the Choc assemblage are relatively high compared to other time periods, no ceramic vessels were found which would score higher than two decorative steps. The relatively high overall scores are a result of a high proportion of slipped monochromes in relation to unslipped, undecorated pottery (Table 7.18, Figure 7.6). A very small number of ceramic type-varieties were identified for the Choc phase. While it is possible that some of the Cucul phase types were produced and consumed during the Postclassic but because of their similarity to the Terminal Classic material they were not dated to Choc phase, it can be stipulated that the number of ceramic type-varieties decreased across the El Zotz complexes in the Postclassic period.

Table 7.18 Proportions of sherds with different step scores in El Zotz ceramic assemblages dated to Early Postclassic Choc phase.

Step categories	Acropolis	Group K	Las Palmitas
0	10%	45%	55%
1-2	90%	55%	45%

Choc phase ceramics were found in all three investigated locations on the peripheries of the Acropolis complex (Plaza platform, Strs. L7-17 and L7-20) and amounted to 202 diagnostic sherds. The largest proportion (48%) of this sample was found in the contexts of Str. L7-20, followed by the surface contexts of the Plaza platform (27%) and the contexts of Str. L7-17 (25%), (Table 7.17). Almost the entire diagnostic assemblage (94%) was composed of slipped monochromes of two ceramic types: Augustine Red (91% of the Acropolis Postclassic monochromes) and Paxcaman Red (9% of the Acropolis Postclassic monochromes). There was also one unslipped, undecorated Postclassic type – Pozo Unslipped. And although the production of some types, such as Augustine Red, likely began earlier, in the Terminal Classic period, and the production of other types, such as Pozo Unslipped or Paxcaman Red, is usually dated to later Postclassic phases, the stratigraphy of the site suggests these types were present at El Zotz during the Early Postclassic period (Kingsley and Gámez in press).

The Las Palmitas Choc assemblage of 244 sherds was found across 11 locations within the core of the compound (Table 7.17). The largest proportion (47%) of the sample was excavated from the rubbish pit deposits, from the layers covering the Cucul assemblage. Nineteen percent (19%) was excavated from the contexts of Str. M3-9 and 11% from Str. M3-5 (Table 7.17). The rest of the Choc assemblage was scattered in very small quantities around all of the various locations within the compound. Similar to the Acropolis complex, there were only three ceramic types; however, the proportion of unslipped pottery was much higher than at the Acropolis and constituted 55%, with 45% of the assemblage classified as the two monochrome types (Augustine Red, Paxcaman Red). As at the Acropolis, the majority of the monochrome sample was diagnosed as Augustine Red type (65%) with the rest classified into Paxcaman Red type (35%).

The patterns emerging from the analysis of Choc phase material are very different to those identified for other time periods. Relatively high PSI scores were generated for the three investigated complexes despite the fact the ceramics were found in very few areas. There were only three reliably diagnostic ceramic type-varieties and there were no sherds scoring more than 2 decorative steps. Thus, unusually, the most limited ceramic assemblage scored some of the highest PSI results.

7.1.7. Step categories analysis and summary

To better understand the results of Production Step Index analysis, I examined the composition of the ceramic collection from each complex based on the different step categories. I placed the step categories into 5 groups: 0 steps, 1-2 steps, 3-4 steps, 5-6 steps, 7-8 steps. The category of 0 steps proved the largest part of every ceramic assemblage as it comprises all the unslipped and striated ceramic types. The 1-2 steps category includes all of the monochrome vessels and also constitutes a significant part of each assemblage. Further step categories of 3 steps and more include pottery vessels which required a combination of decorative techniques as well as bichrome and polychrome painted types.

For the Chub/Saquij I chronological phase, it is evident that the slight difference between the PSI scores of El Diablo and the Acropolis was likely caused by the difference in the composition of ceramics scoring 5-6 steps: 3.00% for El Diablo and 1.37% for the Acropolis (Table 7.3). The other step categories are distributed across these two complexes in relatively similar proportions. Surprisingly, El Tejón, scoring the lowest PSI, shows the highest proportion of highly decorated ceramics of 5-6 steps (3.49%); however, it also shows the highest proportion of ceramics of 0 steps (63.95%), (Table 7.3).

The ratios calculated for the Saquij II phase show a greater differentiation across the three complexes. At the Acropolis, sherds scoring 1-2 steps (54.70%) outnumbered those scoring zero decorative steps (39.53%), (Table 7.6). Additionally, sherds with scores 3-4 and 5-6 are more common at the Acropolis than at any of the two hilltop complexes. Sherds with scores higher than two decorative steps are far less abundant at El Diablo and El Tejón than at the Acropolis. These differences in composition clearly account for the differences in PSI results for Saquij II phase.

For the Caal phase assemblage, the most substantial change in ceramic composition is the increase in relative frequency of the 5-6 steps ceramic category. Sherds of this category became prominent in relation to other, lower scoring step categories. Within the Acropolis assemblage, sherds scoring 5-6 steps accounted for 13.11%, within Group K – 8.69%, and within Las Palmitas – 5.16% (Table 7.11).

The Cucul phase results show a significant decrease in occurrence of higher scoring pottery (five steps and higher) and an increase in occurrence of the lower scoring pottery. Interestingly, the ratio of the zero steps category to 1-2 steps category is very similar across all three complexes (Acropolis, Group K, Las Palmitas) and the major differences are found between the proportions of the 5-6 steps category across complexes. Las Palmitas collection contained the highest proportion of the 5-6 steps category ceramics, and even though it scored lower for 3-4 steps or 7-8 steps; this increase was significant enough to give Las Palmitas the highest PSI result for the Terminal Classic time period.

The step categories analysis highlights several important points which aid in the interpretation of the PSI results. First of all, the proportion of the category of 5-6 steps seems to be the most influential for the compound PSI scores. For the analysis of

individual chronological phases, the complex with highest proportion of ceramics scoring 5-6 steps also had the highest PSI result.

There are eleven surface treatment combinations scoring five and six steps, which are largely bichrome and polychrome decoration. Most bichrome decoration entails five steps and most polychrome decoration is classed into six steps (preparing the slip/underslip, slipping or putting on an undercoat, preparing two or three paints, and painting). Thus, the proportion of bichrome and polychrome ceramic types relative to other types has potentially a significant effect on the general ‘investment’ in the pottery collections measured by Production Step Index analysis.

All the PSI scores for the Late Classic Caal phase are higher than any of the earlier PSI scores (excluding the unusually high scores for Mo’ and Choc phases likely generated by small sample sizes). The high PSI scores for the Caal phase are partly the result of the increase in the numbers of ceramics scoring 5-6 steps (especially bichromes and polychromes) but also owing to the appearance of ceramics scoring 7-8 steps. The 7-8 step category is not a feature of any of the Preclassic or Early Classic contexts; the first specimens that score so highly are found in the Acropolis Mo’ phase contexts. One theory is that when ceramics scoring 5-6 steps are no longer as exclusive as they used to be during earlier time periods, further decorative steps are used during production to manufacture exclusive products. The decorative techniques might have also naturally evolved to become more sophisticated as potters and artists acquired the cumulative knowledge of pottery production from past generations, added to it, improved on it and experimented with new techniques. Most of these highest scoring exclusive objects (scoring 7-8 steps) are bichromes and polychromes which were additionally modelled, channelled, incised, or painted with resist techniques.

Lastly, the relationship between decorative surfaces of vessels and their decorative forms has to be considered when evaluating decorative steps. The Early Classic specimens deemed most decorative usually involve elaborate modelled shapes and complex forms in addition to carved or painted vessel surfaces. They are often found in royal tombs, which prove their high value (for example at Tikal [Culbert 1993], Uaxactun [Smith and Gifford 1966], El Zotz [Houston et al. 2015a]). In the Late Classic period, however, the unique highly decorative forms were less common. Surface decorations, which were not part of the vessel form but produced highly intricate imagery, were the prevalent decorative mode of Late Classic ceramics. As mentioned in Chapter 2, it was even proposed that the Late Classic pottery production was divided between potters who produced vessel shapes and artisans who decorated them (Reents-Budet et al. 1994, 219). In contrast, it is stipulated that during the Early Classic the whole vessel was produced by the same person, potter and artisan, from beginning to end. The present analysis of surface enhancement techniques does not account for decorative vessel forms and, thus, shows higher scores for the Late Classic phases (which gave more emphasis to surface decoration than form).

7.1.8. Statistical analyses

The results of the Production Step Index scores were scrutinized using statistical techniques in order to investigate their accuracy and whether the change patterns they show through time are statistically significant. The results were tested using Chi-square test and Cramer's V. The Chi-square test calculation was performed to establish whether the differences in PSI scores observed for different chronological phases could have been random or whether they were influenced by factors such as social or economic variations of population groups. The null hypothesis for this test states there were no external factors (social, political, economic and other) affecting the changes in

distribution of high and low scoring ceramics at El Zotz through time. The different distributions of PSI scores (and ultimately the distribution of highly-scoring and low-scoring objects) changed through time; however, it is not clear whether the observed patterns could have been a result of sample biases or other non-archaeological causes. The changes in PSI results were investigated with Chi-square test for the Early Classic transition from Saquij I to Saquij II and for the Late/Terminal Classic transition from Caal to Cucul phase. Thus, I was able to evaluate how random or how relevant the changes in PSI scores were between chronological phases and whether these shifts can be reliably interpreted as being a result of changing political, economic or social dynamics. Cramer's V was subsequently calculated to evaluate the relative strength of associations within the Chi-square test calculations.

Table 7.19 Result of statistical analysis for Early Classic Saquij I to Saquij II transition and for Late Classic Caal to Terminal Classic Cucul transition.

Measurement	Saquij I to Saquij II transition	Caal to Cucul transition
Xsq	5.49	10.99
k	2	2
N	609.92	594.37
Cramer's V	0.095	0.136

For the Early Classic period transition (Chub/Saquij I and Saquij II) the Chi-square score of 5.49 means the null hypothesis cannot be rejected (Table 7.19). This means that statistically there is no meaningful difference between the distribution of different ceramic material across the three different complexes during Saquij I and Saquij II phases. The PSI shift occurring between Saquij I and Saquij II phases (with the dominance shifting from El Diablo towards the Acropolis) is too small and too subtle to be statistically relevant. It is thus very likely there was little change in the dynamics

between the different Early Classic social groups during these Early Classic phases at El Zotz.

The Chi-square score calculated for the shift between Late and Terminal Classic PSI results (Caal and Cucul) equated to 10.99 (Table 7.19). This means the null hypothesis can be rejected and the changes in distribution of different ceramics between these two phases are not random. These changes were likely influenced by external factors. This confirms that the differences in the observed PSI results between Caal and Cucul phases were much larger than the ones between Saquij I and Saquij II. This, in turn, suggests that the changes in concentrations of high-value goods in specific locations were more prominent during the Late and Terminal Classic time periods and less visible for the Early Classic period.

Production Step Index analysis of ceramic data suggests that during the early phases of site occupation, the social and economic dimensions between the complexes of similar size, that is of El Diablo and the Acropolis, were likely very similar. And if there were any such significant differences, they were not expressed in the kinds of material possessions found in each location. They could have been expressed through immaterial means such as titles, rights, prestige, people's perception, respect and/or obedience. The fact that during Late and Terminal Classic periods the shift in distribution of various objects was statistically likely not random suggests that there were deeper material differences between social groups during these times. The PSI differences between similar sizes complexes, such as Acropolis and Las Palmitas, advocate that the differences between higher and lower class groups were more visible in the material objects. This most likely occurred in conjunction with the non-material symbols of status hierarchy. Nevertheless, the material objects were more likely used as social class differentiation tool during the later periods than during the Early Classic period.

Cramer's V is a useful statistical tool that allows for comparing the different Chi-square test results and establishing the strength of potential relationships between variables; in case of this study the two variables of the PSI study are the geographical location and the chronological phase. The calculations of Cramer's V confirmed that for the two Early Classic period phases the relationship between the variables is extremely weak, with a score of 0.095 (Table 7.19). The relationship was most likely non-existent because the null hypothesis could not be rejected after the Chi-square test calculation. Thus, there is statistically no reliable external explanation for any of the subtle differences between the distributions of Saquij I and Saquij II PSI scores as any variation could have been statistically random. However, for the Late and Terminal Classic periods, the relationship is relatively strong, with a score of 0.136 (Table 7.19). Although such low Cramer's V score could still be considered a weak relationship, it is more prominent than the one calculated for the earlier time period. This means there were likely specific factors and circumstances which affected the particular distributions of ceramic objects during Late and Terminal Classic and any changes to these distributions through time.

The overall Cramer's V scores for associations between the chronological and spatial variables were, in general, low. Nonetheless, the results of statistical analyses for Caal to Cucul transition shows that the distribution of different-value objects was more likely to be driven by external factors, such as social class or economic wealth, during these time periods.

7.1.9. Discussion of PSI analysis

Several trends emerge from the above outline of the Production Step Index analysis. First of all, the differences between the PSI scores of the larger architectural complexes (Acropolis, El Diablo, and Las Palmitas) were less significant during the Early Classic

phases than during the Late Classic and Terminal Classic time periods. The uneven distribution of the ceramics and the proportionately smaller amounts of higher scoring ceramics at the Acropolis during Saquij I phase could suggest the possibility of a lower status population occupying the Acropolis in comparison to El Diablo. However, the differences between the two compounds during this time period are statistically very subtle. It is also likely these architectural compounds were used by the same elite class, or even the same lineage, or by elite groups of very similar economic and social status. Moreover, it is possible that ceramic objects were not used as social status markers during the early phase of the Early Classic period. Status and authority could have been expressed through other, non-material, means to a much greater extent than through material possessions during the early reign of the El Zotz dynasty.

The differences between PSI scores for different complexes are also very fine for Saquij II phase assemblages. Even though the overall PSI score for El Diablo is lower than for the Acropolis, the individual scores for the main masonry structures at El Diablo are high above 1.000 point (Strs. F8-1, F8-8, F8-7, F8-4); the overall lower score is a result of more undecorated pottery excavated from El Diablo peripheries (Table 7.7). Thus, the main masonry structures still contained high levels of decorated pottery. Increased PSI scores at the Acropolis signaled the presence of wealth comparable to that of El Diablo. The low strength of association between PSI scores and geographical locations of the assemblages suggests that any visible differences were probably not driven by differences in wealth but were possibly affected by differences in functions of complexes or were simply different by chance.

The PSI scores calculated for ceramics from the El Tejón assemblage are lower than the results for the other two Early Classic settlements and support the idea that this smaller

architectural compound housed a lower-status population or served different purpose for the El Zotz population.

After the hilltop complexes of El Diablo and El Tejón were abandoned at the end of Saquij II phase, the only complex containing a Mo' phase assemblage was the Acropolis. Increasing numbers of polychromes are found even within the small amounts of ceramics dated to the Late Classic Mo' phase. This seems to confirm the idea that the populations occupying the central precinct of El Zotz started accumulating increasing amounts of the high-end objects with time, a pattern already visible for Saquij II phase and which continued into the Late Classic period. There could have been a new political power being established in the central precinct of El Zotz following the abandonment of El Diablo.

The excavation strategies affected the results of current analysis and created an Acropolis-centric view of the Mo' phase occupation at El Zotz. Mo' phase material culture has been recovered from other areas around the central precinct but these areas were never excavated to the same extent as the Acropolis complex. Additionally, the Mo' phase structures at the Acropolis were covered by the later Caal constructions which helped with the preservation of artefacts. The ceramic preservation rates within Mo' contexts were higher in the main masonry structures where Caal phase constructions took place. It is likely that there were significant amounts of Mo' phase ceramics (and possibly also highly decorated and high-scoring ceramics) deposited in various other areas around the central precinct of El Zotz and not only at the Acropolis, however, the recovery rates of these objects were a lot lower.

As suggested by the statistical analysis of PSI results, the differences in the distribution of highly-decorated ceramics are more prominent between the Late Classic Caal phase

and the Terminal Classic Cucul phase than during the Early Classic time period. This may signal deepening inequality in the access to the most precious material objects with time. There was a significant amount of ceramic material recovered from Caal contexts and a large proportion of this assemblage was of bichrome and polychrome ceramic types, resulting in high PSI scores for the central precinct at El Zotz. This suggests the Late Classic Caal phase probably represents the apogee of the elite opulence, social differentiation, and possibly power, as reflected in the wealth of the portable material culture.

As shown at other sites in the Central Maya Lowlands (and beyond), the Late Classic period saw an increase in the elite population compared to earlier time periods. There was also a growing variation in social statuses. This was reflected for instance in an increase in inscribed elite titles found in various Maya texts (for example Stuart 1993; Marcus 2006, 215). The construction of new architectural complexes at El Zotz, some of which exhibited clear signs of elite architecture such as at Las Palmitas, is probably a reflection of this trend happening at El Zotz during the Caal phase. However, while the new complex of Las Palmitas most likely housed an elite population of El Zotz, it did not contain the same concentration of highly decorated pottery as the central areas of the site. Even though Group K is a group of a relatively small-scale architecture compared to Las Palmitas, it contained proportionately more highly-decorated ceramics than the hilltop compound during the Caal phase. The differences between the PSI scores at the central precinct and at the hilltop complex were statistically significant with strong geographical associations.

The PSI results for the Acropolis and Group K complexes were very similar to each other and very different to the Las Palmitas results. This means that the main elite power was likely concentrated in the central precinct of the site during the Caal period

and the different groups in the vicinity of the ruling house had access to a similar range of ceramic objects. The elites of possibly lower status, who established their own spheres of influence on the peripheries, might have participated in different distribution networks of ceramics and other objects than the groups living in the central precinct at El Zotz.

During the Cucul phase there was a dramatic decrease in the values of Production Step Indices calculated for all three complexes. The PSI result for the Las Palmitas group was lower for the Terminal Classic than for the Late Classic period, but this decrease was relatively minor. The largest decrease in PSI scores occurred for the central precinct compounds, the Acropolis and Group K. It can be hypothesised that the biggest drop in PSI values in the central compounds of El Zotz reflects the Terminal Classic crisis of the elites, as seen at other Maya sites in the Petén region and in other regions (Sharer and Traxler 2006, 500-505; Demarest et al. 2004). And similarly to some of the other sites, for instance at Aguateca or Dos Pilas, while the highest elites were the first to be affected by the tumultuous events of the Terminal Classic period, the lower elite households and commoner residences continued to be occupied for some time longer (Inomata 1997; Inomata 2003; Palka 2003). Las Palmitas seems to have benefited from the decreasing power of the Acropolis and might have been a lower elite compound which was economically more stable during the chaotic events of the Terminal Classic. The two largest Cucul deposits, one discovered at the Acropolis ('termination' deposit) and one at Las Palmitas (rubbish pit), indicate behavioural changes of the occupying groups and possibly changes to the use and functions of the compounds. The presence of a very well-preserved Terminal Classic deposit at the Acropolis structures and a rubbish pit at Las Palmitas both suggest the El Zotz populations were using new ways

of disposing of ceramic material or were engaging in new activities at the elite compounds.

The decrease in the values of Production Step Indices across all spatial zones during the El Zotz Terminal Classic Cucul phase does not mean that there was a complete lack of pottery with elaborate decoration present at the site during this time period. It means the vessels with significant investment in decoration were comparatively less common during the Cucul phase than during the other time periods. It is likely, given the regional, political and social trends in Petén during the Terminal Classic, that the production of high-end pottery was gradually decreasing in volume, but not necessarily in quality. Perhaps there were fewer specialist artisans to produce the highly decorated vessels, or perhaps potters and artisans were gradually dedicating less time to high end pottery production and instead focused their resources elsewhere. The highest scoring objects, the ones requiring most time, energy and knowledge to produce, would have been much harder to find and get hold of under such circumstances. Nonetheless, there are several specimens excavated from El Zotz and dated to the Cucul phase which scored higher than the decorated examples from Early or Late Classic assemblages (as many as eight decorative steps).

There seemed to have been a more prominent differentiation between the low-scoring pottery (zero steps) and the high-scoring pottery (eight steps) during the Terminal Classic compared to Early or Late Classic. And while there were Cucul vessels with more decorative steps than those dated to the Late Classic Caal phase, there were significantly fewer of them. The decorated ceramic types commonly found in Caal contexts, such as polychromes, were infrequent or absent from the Cucul contexts. This means there was likely a significant cultural and social shift in ceramic production and consumption. Alternatively, the higher classes of El Zotz, a relatively small city in

Petén dwarfed by much larger and more powerful centres nearby, such as Tikal and Calakmul, could have had their access to the most prestigious and valuable items restricted towards the end of the Classic period. It does not necessarily signify the loss of political power by the elites, although some economic impact in the light of the greater regional trends was highly likely.

The wider social and cultural transitions within communities would have impacted the physical appearance, popularity and distribution of items considered of low or high value. There was a far greater number of types dated to the Cucul phase than to other chronological phases, but the majority of the ceramic assemblage was classified into a handful of these ceramic types. It was likely that the El Zotz population gained access to new distribution markets which enriched the local set of ceramic typology. With time, new production techniques and new designs would have been adopted by local producers for the local consumer markets which would have further increased the variety of ceramic types at the site. These growing numbers of different ceramic types were catering the lower and middle classes of El Zotz as much as they were providing for the tastes of the high elites.

The Production Step Index seems to be strongly influenced by the proportions of bichrome and polychrome ceramic types within the assemblages (5-6 steps and 7-8 steps), regardless of the time period. Thus, the ratios of bichrome and polychrome pottery to other decorated and undecorated ceramics were likely determinant of the relative wealth of the households. Further intricacies of the ceramic types and their likely association to economic and social values are reviewed in further analyses in this chapter.

7.2. Surface Treatment Analysis

The above analysis details the spatial distribution of pottery with different decorative scores during each of the analysed chronological phase. However, the amount of labour put into the decoration of a vessel does not necessarily mirror its social value or its exclusiveness to particular, high social class. The following analysis aims to evaluate the broader trends in ceramic consumption through time across the El Zotz population as a whole rather than for separate architectural complexes. These overarching trends, which stem from tastes, styles and customs of time period and region rather than social differences, underlie and influence the composition of ceramic assemblages. Identifying and selecting different ceramic types or groups is also essential to complete the next stage of analysis – the Heterogeneity Measure. By evaluating the trends of distribution of vessels with different surface treatment techniques and aesthetics, it will be possible to select the best-suited group of objects for further study.

7.2.1. Surface Treatment Analysis level 1

In level 1 of analysis of Surface Treatment, I use the surface treatment categories of Unslipped, Monochrome and Bi/Polychrome as the variables.

Table 7.20 Results of Surface Treatment Analysis level 1.

Time Period	Complex	Unslipped	Monochrome	Bi/Polychrome	Grand Total	Unslipped	Monochrome	Bi/Polychrome
Chub / Saquij I	El Diablo	426	384	23	833	51%	46%	3%
Chub / Saquij I	El Tejón	56	27	3	86	65%	31%	3%
Chub / Saquij I	Acropolis	965	909	26	1,900	51%	48%	1%
Chub / Saquij I Total		1,447	1,320	52	2,819	51%	47%	2%
Saquij II	El Diablo	1,348	983	43	2,374	57%	41%	2%
Saquij II	El Tejón	188	98	3	289	65%	34%	1%
Saquij II	Acropolis	1,699	2,428	136	4,263	40%	57%	3%
Saquij II Total		3,235	3,509	182	6,926	46.7%	50.7%	2.6%
Mo'	Acropolis	750	695	316	1,761	43%	39%	18%

Time Period	Complex	Unslipped	Monochrome	Bi/Polychrome	Grand Total	Unslipped	Monochrome	Bi/Polychrome
Mo' Total		750	695	316	1,761	43%	39%	18%
Caal	Acropolis	2,998	2,269	788	6,055	50%	37%	13%
Caal	Las Palmitas	1,898	790	143	2,831	67%	28%	5%
Caal	Group K	755	360	105	1,220	62%	30%	9%
Caal Total		5,651	3,419	1,036	10,106	56%	34%	10%
Cucul	Acropolis	7,104	3,534	157	10,795	66%	33%	1%
Cucul	Las Palmitas	2,667	1,341	124	4,132	65%	32%	3%
Cucul	Group K	647	328	16	991	65%	33%	2%
Cucul Total		10,418	5,203	297	15,918	65%	33%	2%
Choc	Acropolis	24	218		242	10%	90%	0%
Choc	Las Palmitas	133	111		244	55%	45%	0%
Choc	Group K	5	6		11	45%	55%	0%
Choc Total		162	335	0	497	33%	67%	0%
Grand Total		21,663	14,481	1,883	38,027	57%	38%	5%

The composition of the Chub / Saquij I ceramic assemblage consists of a majority of unslipped ceramics (51%), a large proportion of various monochromes (47%) and a small amount of painted bichrome and polychrome pottery (2%). The proportion of the ceramic groups changed during the Saquij II phase. The monochrome ceramic types constituted the majority of the assemblage (51%) while the unslipped pottery constituted 47% and painted pottery - 2.6% (Table 7.20, Figure 7.7). Thus, while the relative proportions of painted pottery, which scores highly with decorative steps, remained at a similar level during both Early Classic chronological phases, the proportions of unslipped and slipped pottery fluctuated throughout the Early Classic period.

The Mo' phase assemblage, recovered only from the Acropolis complex, showed a significant shift in the relative proportions of painted ceramic types which constituted a comparatively big part of the Mo' sample, at 18%. The increased occurrences of bichromes and polychromes happened in conjunction with a decrease in relative

proportions of both monochromes (39%) and unslipped pottery types (43%), (Table 7.20, Figure 7.7).

The Caal ceramic assemblage also contained a relatively large proportion of painted ceramics (10%), similar to the composition of the Late Classic Mo' phase. However, the proportion of unslipped pottery was significantly higher (56%) and the proportion of monochromes significantly lower (34%) than recorded for the Mo' phase (Table 7.20). Thus, the unslipped pottery constituted the majority of the Caal assemblage, similar to the Early Classic period assemblages, and the painted vessels were becoming more commonly found at the expense of the monochrome ceramic types.

The Cucul assemblage exhibited another shift in the proportions of ceramic groups. The presence of unslipped pottery increased compared to the Late Classic period and constituted 65% of the pottery. The monochromes remained at a similar level (33%) to the proportions recorded for the Caal phase (34%). The proportions of painted pottery changed most drastically and decreased to a mere 2%. Thus, towards the end of the occupation of the largest El Zotz complexes, the proportions of painted ceramics within ceramic assemblages were very similar to the proportions calculated for the earliest chronological phases of occupation. However, the frequency of monochrome pottery proportionate to the unslipped pottery decreased during the Late and Terminal Classic (33% - 34% of monochromes) in comparison to the Early Classic period (47% - 51% of monochromes), (Table 7.20, Figure 7.7).

7.2.2. Surface Treatment Analysis level 2

In level 2 of analysis of Surface Treatment of ceramics I split the monochromes into two categories: red/orange and black/brown slip colours. Thus, there are four categories used in this analysis: Unslipped, Red/Orange, Black/Brown, Bi/Polychrome.

Table 7.21 Results of Surface Treatment Analysis level 2

Time Period	Complex	Unslipped	Red/Orange	Black/Brown	Other	Bi/Polychrome	Grand Total
Chub / Saquij I	El Diablo	426	285	93	6	23	833
Chub / Saquij I	El Tejón	56	20	7		3	86
Chub / Saquij I	Acropolis	965	730	172	7	26	1900
Chub / Saquij I Total		1,447	1,035	272	13	52	2,819
Saquij II	El Diablo	1,348	851	132		43	2,374
Saquij II	El Tejón	188	84	14		3	289
Saquij II	Acropolis	1,699	1,866	562		136	4,263
Saquij II Total		3,235	2,801	708	0	182	6,926
Mo'	Acropolis	750	596	98	1	316	1,761
Mo' Total		750	596	98	1	316	1,761
Caal	Acropolis	2,998	1,941	316	12	788	6,055
Caal	Las Palmitas	1,898	644	131	15	143	2,831
Caal	Group K	755	313	43	4	105	1,220
Caal Total		5,651	2,898	490	31	1,036	10,106
Cucul	Acropolis	7,104	3,182	343	9	157	10,795
Cucul	Las Palmitas	2,667	1,182	136	23	124	4,132
Cucul	Group K	647	303	23	2	16	991
Cucul Total		10,418	4,667	502	34	297	15,918
Choc	Acropolis	24	218				242
Choc	Las Palmitas	133	111				244
Choc	Group K	5	6				11
Choc Total		162	335	0	0	0	497
Grand Total		21,663	12,332	2,070	79	1,883	38,027

The analysis of the colour composition of ceramic assemblages shows that the ratios of red and orange types to black and brown ceramic types were similar throughout the Classic time periods. During the Early Classic phases, red/orange monochromes constituted 37% (Saquij I) and 40% (Saquij II) of the assemblage while the black/brown monochromes – 10% of both ceramic samples (Table 7.21, Figure 7.8). As the painted pottery was relatively rare during the Early Classic, the monochrome groups formed a large portion of all of the recovered sherds.

During the Late Classic period phases, as the relative numbers of bichromes and polychromes increased, the amount of both red/orange and black/brown monochrome groups decreased. The proportion of red/orange types decreased to 34% during the Mo' phase and then decreased further to 29% during the Caal phase. The proportion of black/brown pottery decreased to 6% (Mo' phase) and then decreased further to 5% (Caal phase) of the diagnostic ceramic assemblage. This trend occurred alongside a surge in the occurrence of painted pottery: from 2% (Saquij I) and 3% (Saquij II) during the Early Classic to 18% (Mo') and 10% (Caal) during the Late Classic (Table 7.21, Figure 7.8).

The proportions of different monochrome ceramic colour groups during the Terminal Classic period are very similar to the ones recorded for the Caal phase. The proportion of red/orange ceramics remained stable during both time periods at 29%. The proportion of black/brown ceramics decreased from 5% during the Caal phase to 3% during the Cucul phase. There was a dramatic drop in presence of painted pottery from 10% to 2% from Late to Terminal Classic which was coupled with a significant increase in proportions of unslipped pottery (Table 7.21, Figure 7.8).

The overall results of the surface treatment analysis show that the majority of the El Zotz pottery (56.97%) was composed of unslipped (including striated) type-varieties. The red/orange monochrome types were the second most frequently found ceramic types and constituted 32.43% of the sample. The black/brown types were the third largest group, but they were much less commonly found than the unslipped and red/orange pottery; they constituted 5.44% (Table 7.21, Figure 7.8). The painted ceramic types (bichromes and polychromes) were found at a similar level to the black/brown monochromes, at 4.95%. Every other colour type of ceramics accounted for the rest of the assemblage (0.21%). Thus, the red/orange monochrome vessels are

found in larger volumes and in proportions similar to the utilitarian vessels and unslipped pottery. The black/brown monochromes, on the other hand, are found in much lower quantities and resemble more closely the frequencies of painted ceramics.

Thus, it is possible that different colours of monochrome pots were also indicators of elite taste; in this case, the black/brown vessels were potentially more closely associated with elite consumption than the red/orange ones. This trend is demonstrated by the ceramic types found in the El Diablo royal tomb. While both black/brown and red/orange monochromes are found inside the tomb (and multiple red cache vessels are found in structure cores outside the tomb), the black/brown pots are decorated into complex shapes and decorated with motifs which resemble the shapes and motifs of the polychrome vessels (Newman et al. 2015, 88-95, 121-144). None of the decorated vessels was of red or orange monochrome type (Newman et al. 2015). This indicates that even though both ceramic colour groups appear in the same primary context of special significance at the site, the choices of colours and decorative aesthetics made by the producers and consumers might have influenced the assigned relative ‘value’ to vessels of different slips colours. This hypothesis will have to be tested with further analysis.

7.2.3. Surface Treatment Analysis level 3

Level 3 of Surface Treatment analysis is the most detailed and combines the variables of slip colour of monochromes with the presence of additional non-colour decoration. The seven categories used in this analysis are: Unslipped, Unslipped decorated, Red/Orange, Red/Orange decorated, Black/Brown, Black/Brown decorated, Bi/Polychrome.

Table 7.22 Results of Surface Treatment Analysis level 3.

Time Period	Complex	Unslipped	Red/Orange	Black/Brown	Other	Unslipped decorated	Red/Orange decorated	Black/Brown decorated	Bi/Polychrome	Grand Total
Chub / Saquij I	El Diablo	419	282	85	6	7	3	8	23	833
Chub / Saquij I	El Tejón	55	20	7		1			3	86
Chub / Saquij I	Acropolis	960	717	149	7	5	13	23	26	1,900
Chub / Saquij I Total		1,434	1,019	241	13	13	16	31	52	2,819
Saquij II	El Diablo	1,328	844	111		20	7	21	43	2,374
Saquij II	El Tejón	186	83	14		2	1		3	289
Saquij II	Acropolis	1,685	1,841	477		14	25	85	136	4,263
Saquij II Total		3,199	2,768	602	0	36	33	106	182	6,926
Mo'	Acropolis	745	589	94	1	5	7	4	316	1,761
Mo' Total		745	589	94	1	5	7	4	316	1,761
Caal	Acropolis	2,974	1,893	282	12	24	48	34	788	6,055
Caal	Las Palmitas	1,891	622	124	15	7	22	7	143	2,831
Caal	Group K	748	304	33	4	7	9	10	105	1,220
Caal Total		5,613	2,819	439	31	38	79	51	1,036	10,106
Cucul	Acropolis	7,091	3,044	286	9	13	138	57	157	10,795
Cucul	Las Palmitas	2,662	1,133	122	23	5	48	15	124	4,132
Cucul	Group K	647	294	21	2		8	3	16	991
Cucul Total		10,400	4,471	429	34	18	194	75	297	15,918
Choc	Acropolis	24	218							242
Choc	Las Palmitas	133	111							244
Choc	Group K	5	6							11
Choc Total		162	335	0	0	0	0	0	0	497
Grand Total		21,553	12,001	1,805	79	110	329	267	1,883	38,027

In this level of analysis, each colour group (with the exception of painted ceramics) is further subdivided into decorated and undecorated types. While slipping is already considered a form of decoration, the monochromes with non-colour decoration include varieties which exhibit additional steps of decoration beyond just slipping, such as: incising, impressing, modelling and appliqué, among others.

For all the analysed time periods, the unslipped decorated and monochrome decorated ceramics formed a very small proportion of each ceramic assemblage. The unslipped

pottery with non-colour decoration decreased in occurrence through time, from 0.46% during the Chub/Saquij I (Early Classic) phase to 0.11% during the Cucul (Terminal Classic) phase (Table 7.22). The red/orange ceramics with non-colour decoration, on the other hand, increased in proportion through time. During the Chub/Saquij I phase the red and orange types with non-colour decoration constituted 0.57% of the assemblage, during the Saquij II phase – 0.48%. But during the Caal phase their frequency increased to 0.78% and then to 1.22% during the Cucul phase (Table 7.22).

The black/brown ceramic types with additional non-colour decorations decreased in occurrence through time. The decrease of black/brown pottery with non-colour decoration was more significant than the decrease of unslipped decorated pottery. This might be because there were more black/brown sherds with non-colour decoration recovered from El Zotz complexes from the contexts of the early occupation. The decorated black/brown types formed 1.10% of the Chub/Saquij I assemblage and 1.53% of Saquij II assemblage (Table 7.22). This proportion decreased to as little as 0.50% during the Caal phase and 0.47% during the Cucul phase (Table 7.22). Thus, it appears that during the Early Classic period, when the painted pottery was relatively infrequent, the black and brown monochromes with additional non-colour decoration were relatively common compared to other decorated pottery types. And while the quantities of the black/brown decorated monochromes were lower than those of bichromes and polychromes, the differences were minimal, 1.10% of black/brown decorated pottery to 1.84% of painted pottery during Chub/Saquij I and 1.53% to 2.63% during Saquij II phase (Table 7.22). During the late Classic period when the proportions of bichromes and polychromes increased, the proportions of black/brown decorated ceramics decreased. During the Late Classic period the popularity of painted pottery far exceeded the consumption of ceramics with other forms of decoration. During the Terminal

Classic Cucul phase, both of the pottery groups (black/brown with additional non-colour decoration and bichrome/polychrome types) further decreased in numbers. In contrast, the red/orange ceramics with non-colour decoration increased in quantity during the Terminal Classic Cucul phase. This increase is especially visible in the transition from the Late Classic to the Terminal Classic period, when other decorated types became less abundant.

Table 7.23 Proportions of decorated sherds in Red/Orange and Black/Brown colour groups through time.

Time Period	Complex	Decorated sherds within Red/Orange group	Decorated sherds within Black/Brown group
Chub / Saquij I	El Diablo	1%	9%
Chub / Saquij I	El Tejón	0%	0%
Chub / Saquij I	Acropolis	2%	15%
Chub / Saquij I Total		2%	13%
Saquij II	El Diablo	1%	19%
Saquij II	El Tejón	1%	0%
Saquij II	Acropolis	1%	18%
Saquij II Total		1%	18%
Mo'	Acropolis	1%	4%
Mo' Total		1%	4%
Caal	Acropolis	3%	12%
Caal	Las Palmitas	4%	6%
Caal	Group K	3%	30%
Caal Total		3%	12%
Cucul	Acropolis	5%	20%
Cucul	Las Palmitas	4%	12%
Cucul	Group K	3%	14%
Cucul Total		4%	17%
Choc	Acropolis	0%	
Choc	Las Palmitas	0%	
Choc	Group K	0%	
Choc Total		0%	
Grand Total		3%	15%

Interestingly, the proportions of black/brown decorated sherds and the red/orange decorated sherds within all of the chronological ceramic assemblages are relatively

comparable, even though the red/orange monochrome group is consistently larger than the black/brown ceramic colour group. Thus, I have conducted further analysis with the aim to establish the ratios of decorated (sherds with additional non-colour decoration) to undecorated sherds within the colour assemblages rather than within the chronological assemblages. The data shows that the black/brown monochrome ceramic group had consistently larger proportions of vessels exhibiting additional techniques of decoration than the red/orange ceramics. The overall proportion of black/brown decorated types amounted to 15% and ranged from 4% (Mo' phase) to 18% (Saquij II phase) through the time periods. The overall proportion of decorated sherds within the red/orange group was 3% and ranged from 1% (Saquij II and Mo' phases) to 4% (Cucul phase), (Table 7.23, Figure 7.9).

I carried out the ANOVA analysis to test whether the proportion of decorated sherds of the red and orange slipped types is statistically comparable to those of the black and brown slipped ceramic types. The null hypothesis states that the proportions of sherds with decoration additional to slipping within each colour group was consistently similar through time. The analysis of variance returned an F value of 18.87 which is comfortably above the α of 0.01 equal to 11.26. Thus, the null hypothesis can be rejected. This means there is statistically 99% certainty the proportion of decorated sherds within red/orange ceramic group and within black/brown group was significantly different for all occupation phases and was not caused by sampling variations.

Therefore, the black and brown ceramic types are statistically more likely to have been decorated beyond surface slipping compared to the red and orange types. This, and the fact that the black and brown types are consistently found in small quantities similar to the quantities of the painted pottery, allows me to hypothesise that black/brown

monochromes could have been objects of higher value and possibly of more restricted distribution than other monochrome types. The red and orange monochromes, on the other hand, were more commonly found within each assemblage. Their distribution was likely more accessible and thus many red/orange vessels probably served domestic and utilitarian functions. During the Caal phase, while both the Acropolis and Group K complexes showed similarly high PSI scores, the Acropolis ceramic assemblage contained a larger proportion of black ceramic type (Infierno Negro) while the Group K assemblage contained more of the red and orange pottery (Tinjaja Red and Azote Orange types). The Acropolis complex is much larger than Group K and has aspects typically associated with elite architecture. The patterns of colours in monochrome ceramics combined with architectural evidence, thus, support the argument that the black/brown ceramic group was likely of higher value than the red/orange group. The black/brown pottery could have represented the colour of choice for serving and display vessels used in elite households for group activities, while the red/orange vessels (rarely decorated) might have been used for more mundane, cooking or storing functions. The distribution patterns of these two distinct colour groups, in addition to the distribution of highly decorated, painted pottery, across architectural complexes might be a useful indicator of social hierarchy of households and activities carried out within them.

7.3. Heterogeneity Measure

Following the results of the Production Step Index analysis and the Surface Treatment Analysis, I have selected a range of ceramic type-varieties to determine the Heterogeneity Measures of different groups of pottery through time. The selected types fall into categories of unslipped undecorated ceramics, red/orange ceramics (with and without additional decorative features), black/brown ceramics (with and without

additional decoration), orange bichrome and polychrome types (those with orange background) and other bichrome and polychrome types (with non-orange background).

The different groups of ceramic types selected for this analysis were chosen on the basis of the above analyses as well as the size of the available sherd samples. For example, the black/brown (decorated and undecorated) ceramics are analysed together because of the small quantities of sherds, while the red/orange pottery, due to its abundance, was split into decorated and undecorated varieties and analysed as separate entities. It was possible to analyse the bichromes and polychromes from the orange type-varieties separately to other painted types as the orange polychromes are the most common group of painted pottery during each time period. The rest of the painted pottery was analysed together as the sample sizes for each separate colour type (cream, buff, red, other) were too small for individual statistical tests. There were additionally instances when a sample of a particular ceramic group from one of the architectural complexes was too small for the analysis of variance; such samples were excluded from the Heterogeneity Measure analysis.

The assemblages formed by the different ceramic types and groups were compared across three different chronological phases and across all the architectural complexes. The Early Classic phases, Chub/Saquij I and Saquij II, were analysed together, due to the relatively small sample sizes for each individual chronological phase. The comparison involved the Early Classic ceramics from El Diablo, El Tejón and the Acropolis. The Mo' phase assemblage was excluded from the Heterogeneity Measure analysis. The Caal and Cucul phases were the only other chronological phases which allowed for a reliable comparison across three complexes: the Acropolis, Las Palmitas and Group K. The Choc phase assemblage was too small for an individual statistical study.

The results of the Heterogeneity Measure analysis for each of the three time periods, Early Classic, Late Classic Caal phase and Terminal Classic, are outlined below (based on the method published by Hirth 1998, 459-462; Garraty 2009, 161-171). The calculated F scores are evaluated against the critical values at $\alpha=0.05$ to establish whether the null hypothesis can be rejected or not. The null hypothesis states that there are no significant differences in distribution of the selected ceramic groups across architectural complexes and therefore there was equal access to, and similar consumption levels of, the particular ceramic types analysed. If the null hypothesis is rejected, there was likely a variable consumption of and variable access to the analysed ceramic types.

7.3.1. Early Classic Heterogeneity Measure

Table 7.24 Results of Heterogeneity Measure Analysis for assemblages dated to Chub / Saquij I (Late Preclassic / Early Classic) and Early Classic Saquij II phases.

Chub/Saquij I, Saquij II							
Ceramic groups	Statistic measurement	El Diablo	Acropolis	El Tejón	F results	F parameters	Null hypothesis
Unslipped, undecorated	Mean	54.07	34.40	64.18	6.34	(2, 21)	Rejected
	Median	55.08	42.01	65.67			
	Sherds Analysed	1,747	2,645	241			
Red, Orange undecorated	Mean	34.91	50.87	26.88	3.47	(2, 26)	Rejected
	Median	33.62	50.00	26.88			
	Sherds Analysed	1,115	2,477	101			
Red, Orange decorated	Mean	0.44	5.22		1.03	(1, 12)	Not rejected
	Median	0.36	0.91				
	Sherds Analysed	10	38				
Black, Brown (undecorated, decorated)	Mean	7.01	10.39	6.51	2.16	(2, 23)	Not rejected
	Median	6.60	10.07	6.51			
	Sherds Analysed	220	697	21			
Orange Bi/Polychromes	Mean	1.38	2.46		6.55	(1, 12)	Rejected
	Median	1.16	2.30				
	Sherds Analysed	37	124				
Bi/Polychromes non-orange	Mean	1.79	1.44		0.05	(1, 8)	Not rejected
	Median	0.58	0.52				
	Sherds Analysed	14	34				

The six analysed ceramic groups show variable distributions across the three Early Classic complexes (Table 7.24). The El Tejón samples of red/orange decorated pottery, orange bi/polychromes and the non-orange bi/polychromes were too small to include in the analysis of variance, and therefore the analyses of these three ceramic groups included only samples from El Diablo and the Acropolis complexes.

Three ceramic groups – the red/orange decorated pottery, black/brown slipped pottery with and without additional decoration, and non-orange bichromes and polychromes – did not show significant differences in their distribution across the structures at the three architectural complexes: El Diablo, Acropolis and El Tejón. The calculated F scores for these ceramic groups were lower than the critical value for F, using $\alpha=0.05$, which means the null hypothesis cannot be rejected (Table 7.24). This means it is unlikely there was differentiated access to or differentiated consumption of these ceramic goods during the Early Classic period across the analysed populations. In the case of the orange and non-orange painted ceramics (both bichromes and polychromes) there is little evidence of their presence at El Tejón and therefore the analysis of variance only tested the ceramic distribution across the El Diablo and the Acropolis complexes. While there is no difference in distribution of the non-orange bichromes and polychromes between El Diablo and the Acropolis, the El Tejón complex possibly had more limited access to these kinds of pots as very small quantities were found there (three sherds).

Three ceramic groups – the unslipped undecorated pottery, the red/orange undecorated pottery, and the orange bichromes and polychromes – all showed levels of differentiated distribution across the structures of the analysed complexes. These three ceramic groups have comparatively larger sherd samples than the other three ceramic groups and, therefore, there might be a question of sample bias whereby smaller samples are less likely to show variation than the larger ones. However, as the H scores for each ceramic

group are proportioned to the total amount of sherds recovered per structure, the sample bias will have limited effect on the ANOVA results. The F scores calculated for these three ceramic groups are higher than the critical values at $\alpha=0.05$, which means the null hypothesis can be rejected (Table 7.24). The distribution of these objects was affected by differentiated access to or differentiated consumption of these three selected ceramic groups.

The variations in distribution of these ceramic groups (unslipped undecorated, red/orange undecorated, orange bi/polychromes) were further investigated to assess whether the differences were caused by one architectural complex being different from the two others or whether all three complexes differed in their ceramic compositions during the Early Classic period. The distribution of each of these three ceramic groups was further tested with ANOVA analysis for each pair of the architectural compounds: El Diablo – Acropolis, El Diablo – El Tejón (when sample allowed), Acropolis – El Tejón (when sample allowed).

The unslipped undecorated ceramic assemblage showed significant difference in distribution between El Diablo and the Acropolis as well as between El Tejón and the Acropolis complexes. No significant difference was observed between the El Diablo and El Tejón assemblages. The F score calculated for El Diablo and the Acropolis assemblages is 8.22, for El Tejón and the Acropolis it is 9.27. Both these results are significantly above the critical values at $\alpha=0.05$ and the null hypothesis can be rejected in both instances. In contrast, the F scores for El Diablo – El Tejón analysis is 1.45, significantly lower than the critical value at $\alpha=0.05$. Consequently, the null hypothesis cannot be rejected in this case. Thus, it is likely the two hilltop complexes shared the consumption patterns of these ceramic types in a much closer manner with each other than with the complex located further away on the valley floor – the Acropolis. The

quantitative analysis results for the unslipped, undecorated pottery at El Diablo and El Tejón were also comparable. The mean result for the El Diablo complex equals to 54.07 and the median equals to 55.08. At El Tejón, the mean equals to 64.28 and the median equals to 65.67. The Acropolis complex returned much lower results, with the mean equal to 34.40 and the median equal to 42.01 (Table 7.24).

The red/orange undecorated pottery also showed significant differences in frequency and distribution between the El Diablo and Acropolis assemblages. The F result calculated for these two samples, equal to 5.27, is much higher than the critical value at $\alpha=0.05$, therefore the null hypothesis can be rejected. Similarly to the unslipped pottery, the El Diablo and El Tejón ceramic assemblages showed no significant difference in occurrences of red/orange undecorated vessels. With the F score equal to 0.88 the null hypothesis for the El Diablo – El Tejón pair cannot be rejected. In contrast to the unslipped pottery, the ANOVA result for the comparison between the Acropolis and El Tejón ceramic assemblages also did not signal any significant differences in proportions of the red/orange undecorated pottery. With the F score equal to 2.04, the null hypothesis cannot be rejected. Thus, even with strikingly different mean and median results, El Tejón is not statistically different in the composition of the red/orange ceramics to either of the other architectural compounds (Table 7.24). The El Diablo and Acropolis assemblages, however, continue to show significant contrast in their ceramic assemblages.

The orange bichromes and polychromes of the Early Classic were the last ceramic group to be scrutinised with ANOVA analysis. The F result of 6.55 is based on the comparison of the El Diablo and Acropolis assemblages alone as El Tejón did not yield a big enough sample for the analysis. The mean (2.46) and median (2.30) results for the Acropolis assemblage are higher than for the El Diablo assemblage (mean=1.38,

median=1.16), (Table 7.24). This suggests there was greater accumulation of orange bichrome and polychrome ceramics at the Acropolis rather than at El Diablo. This result is likely affected by higher proportions of polychromes found at the Acropolis during the Saquij II phase rather than during the Saquij I phase, as was illustrated by the shift in PSI scores between these two chronological phases for the two architectural complexes.

7.3.2. Late Classic Caal Heterogeneity Measure

Table 7.25 Results of Heterogeneity Measure Analysis for assemblages dated to Late Classic Caal phase.

Caal							
Ceramic groups	Statistic measurement	Acropolis	Las Palmitas	Group K	F results	F parameters	Null hypothesis
Unslipped, undecorated	Mean	43.56	69.63	63.60	12.89	(2, 26)	Rejected
	Median	44.71	67.92	71.95			
	Sherds Analysed	2,974	1,891	748			
Red, Orange undecorated	Mean	42.93	22.16	23.78	6.05	(2, 26)	Rejected
	Median	34.19	21.43	21.81			
	Sherds Analysed	1,892	622	304			
Red, Orange decorated	Mean	1.09	2.16	0.79	0.52	(2, 18)	Not rejected
	Median	1.38	1.03	0.57			
	Sherds Analysed	44	20	7			
Black, Brown (undecorated, decorated)	Mean	5.63	5.61	3.15	0.69	(2, 18)	Not rejected
	Median	4.90	4.00	1.98			
	Sherds Analysed	308	130	43			
Orange Bi/Polychromes	Mean	10.68	4.09	6.92	6.78	(2, 22)	Rejected
	Median	10.71	2.94	5.35			
	Sherds Analysed	565	99	93			
Bi/Polychromes non-orange	Mean	3.19	1.47	0.43	2.15	(2, 14)	Not rejected
	Median	2.38	1.37	0.43			
	Sherds Analysed	157	23	4			

The ceramic samples dated to the Caal phase proved large enough for each of the six ceramic groups analysed; thus, each individual statistical test was performed on ceramic samples from all three complexes (Acropolis, Las Palmitas, Group K). The analysis of

variance conducted on the Late Classic Caal ceramic assemblage returned similar results to the ones performed on the Early Classic El Zotz pottery. Three ceramic groups – red/orange decorated types, black/brown ceramics with and without additional decoration, and non-orange bichromes and polychromes – returned F scores below the critical values at $\alpha=0.05$ (Table 7.25). The null hypotheses for these ceramic groups cannot be rejected. This means these selected ceramic types are relatively evenly distributed among the structures of the three analysed complexes.

The ANOVA results for the three other ceramic groups – the unslipped undecorated ceramics, red/orange undecorated types, and the orange bichromes and polychromes – all indicated differentiated distribution across the three locations. The F score calculated for the unslipped undecorated assemblages amounted to 12.89. This is higher than the F critical value at $\alpha=0.05$ of 3.37 and the null hypothesis can be rejected (Table 7.25). To delve deeper into the differences in distributions of unslipped pottery among the three analysed complexes, the F scores were further calculated for each compound pair:

Acropolis – Las Palmitas, Acropolis – Group K, Las Palmitas – Group K. The F score calculated for the Acropolis – Las Palmitas assemblages was higher than the critical value at $\alpha=0.05$ of 4.26 and amounted to 26.47. The null hypothesis for this pair can be rejected. This means that the Acropolis ceramic assemblage differed in its composition of unslipped pottery to the Las Palmitas compound during the Caal phase. The ANOVA results calculated for the Acropolis – Group K and Las Palmitas – Group K analyses were lower than the F critical value and therefore the null hypothesis could not be rejected for either of these pairs. The Acropolis complex had the lowest mean (43.56) and median (44.71) for the unslipped ceramics occurrence within the Caal assemblage (Table 7.25). Las Palmitas had the highest mean (69.63) and median (67.92). The Group K assemblage scored a mean of 63.60 (Table 7.25), which falls in between the results

for the other two complexes. However, the median is much higher than the one calculated for Las Palmitas, at 71.95. Therefore, even though the F scores suggest there is no statistical difference between the proportions of unslipped ceramics from Group K and the Acropolis and from Group K and Las Palmitas, the quantitative H scores suggest that Group K Caal assemblage of unslipped ceramic types is more similar to the assemblage from Las Palmitas than to the one excavated at the Acropolis.

The analysis testing the distribution of red/orange undecorated pottery among the Late Classic complexes returned similar results to those calculated for the unslipped ceramics. The statistically significant difference in distribution of the ceramics occurred between the Acropolis and Las Palmitas complexes, while the other pairs of complexes all returned F scores below the critical values at $\alpha=0.05$. However, similarly to the situation described above, the quantitative results of the Las Palmitas and Group K assemblages are closer to one another than to the results for the Acropolis sample. The mean and median for red/orange undecorated pottery from the Las Palmitas complex amounted to 22.16 and 21.43 respectively. The mean and median for the Group K sample amounted to 23.78 and 21.81 respectively (Table 7.25). The mean and median for the Acropolis sample amounted to 42.93 and 34.19 respectively (Table 7.25). Thus, the Acropolis sample once again appears different to the other ceramic samples found at El Zotz.

The distribution of orange bichromes and polychromes at El Zotz presented a different pattern to the distribution of unslipped or monochrome ceramics during the Caal phase. The ANOVA result for the Acropolis and Group K assemblages was lower than the critical value at $\alpha=0.05$ and amounted to 1.14. Thus, there is no significant difference in the proportions of orange bichromes and polychromes between complexes within the central precinct of El Zotz. The results calculated for the Acropolis – Las Palmitas and

Group K – Las Palmitas combinations were both higher than the F critical values and amounted to 14.05 and 5.53 respectively. Thus, the assemblage derived from Las Palmitas complex contained a different proportion of orange painted types compared to both the Acropolis and Group K. The Acropolis ceramic assemblage returned the highest mean and median, 10.68 and 10.71 respectively (Table 7.25). The Group K complex returned slightly lower quantitative results, a mean of 6.92 and median of 5.35, and Las Palmitas returned the lowest results – a mean of 3.44 and median of 2.56 (Table 7.25).

7.3.3. Terminal Classic Cucul Heterogeneity Measure

Table 7.26 Results of Heterogeneity Measure Analysis for assemblages dated to Terminal Classic Cucul phase.

Cucul							
Ceramic groups	Statistic measurement	Acropolis	Las Palmitas	Group K	F results	F parameters	Null hypothesis
Unslipped, undecorated	Mean	53.54	54.66	65.35	0.40	(2, 14)	Not rejected
	Median	59.11	56.43	64.75			
	Sherds Analysed	7,091	2,662	647			
Red, Orange undecorated	Mean	38.11	62.14	29.51	2.41	(2, 19)	Not rejected
	Median	32.63	50.00	30.19			
	Sherds Analysed	3,013	1,125	293			
Red, Orange decorated	Mean	1.73	3.12	1.17	1.27	(2, 14)	Not rejected
	Median	1.51	2.06	1.20			
	Sherds Analysed	138	49	9			
Black, Brown (undecorated, decorated)	Mean	2.62	3.03	1.98	0.52	(2, 11)	Not rejected
	Median	2.43	4.00	1.79			
	Sherds Analysed	333	133	23			
Orange Bi/Polychromes	Mean	1.13	5.63	2.30	2.52	(2, 10)	Not rejected
	Median	0.91	2.45	2.30			
	Sherds Analysed	82	96	16			
Bi/Polychromes non-orange	Mean	1.89	1.32		0.06	(1, 6)	Not rejected
	Median	0.74	1.32				
	Sherds Analysed	75	28				

The Cucul ceramic assemblages tested with ANOVA method from the Acropolis, Las Palmitas and Group K complexes (same as the Caal assemblage). In contrast to the Late Classic Caal results of analysis of variance, the ANOVA results calculated for the Terminal Classic Cucul ceramic assemblages, derived from the same architectural complexes (Acropolis, Las Palmitas, Group K), all fell below the critical values at $\alpha=0.05$ (Table 7.26). The null hypothesis cannot be rejected for any of the ceramic groups analysed. Therefore, during the Terminal Classic period, none of the ceramic types showed differentiated distribution across the architectural compounds.

7.3.4. Summary of Heterogeneity Measure Analysis

Three ceramic groups – black/brown monochromes, orange bi/polychromes and non-orange bi/polychromes – were selected for the ANOVA analysis because in previous lines of analysis they were identified as potentially associated with the socio-economic status of populations. The other three ceramic groups were selected as control groups as there was little evidence for correlations between vessels of these types and the socio-economic status of households.

Three out of the six groups returned F results above their respective critical values (for Early Classic and Late Classic assemblages). This means three of the ceramic groups showed differentiated distribution among the El Zotz complexes. These ceramic groups are: unslipped undecorated pottery, red/orange undecorated pottery and orange bichromes and polychromes. It is therefore possible that the polychromes painted on orange background were supplied into the different elite households at El Zotz across the same or similar networks as the unslipped and red/orange monochrome pottery, or pottery identified in previous analyses as utilitarian, and low-value (low-scoring). The data also illustrates that these three ceramic groups were accumulated in certain elite households (especially at the Acropolis) in far greater volumes than in other households.

One possible cause for such distribution patterns of ceramic types can be the need to provide for a growing population at the elite court, increase in tribute or tax collection, increase in frequency of feasting events sponsored by the elite household, or simply a shift in the primary purpose of the architectural group to a more administrative function.

The remaining ceramic groups (red/orange decorated, black/brown, non-orange bi/polychromes) did not show any variation in their distribution or frequency of occurrence across the El Zotz architectural compounds. These results imply that the objects falling in these ceramic categories were accessible to all of the El Zotz households included in my sample. Thus, the ceramic groups which were previously identified as possibly of greater social or economic value, such as the painted polychromes or black/brown monochromes, did not exhibit restricted or limited distribution across various El Zotz groups. It might be that these objects were rare, hard to obtain and in demand by the higher and the lower elites equally. It is also possible that they were re-distributed into elite households from a central royal court to forge and strengthen bonds and establish authority. Thus, the distribution networks of these ceramic objects (red/orange decorated, black/brown, non-orange bi/polychromes) was perhaps driven by social affiliations of households, and the distribution of the other three ceramic groups (unslipped undecorated pottery, red/orange undecorated pottery and orange bichromes and polychromes) was driven to a greater extent by their economic means (purchasing power).

No variation in distribution of different ceramic types was seen for any of the Terminal Classic ceramic groups. This implies that the distribution or exchange networks of the different ceramic groups perhaps were not restricted or affected by the dichotomy of elite versus non-elite demand (or tastes), or social and economic factors to the same extent as during previous Early and Late Classic periods.

7.4. Decorative Complexity Analysis

In order to further investigate the potential differences in values of the ceramic assemblages, I delved more deeply into the decorated ceramic assemblage of El Zotz and analysed the modes of decoration (outlined in Chapter 4). Only one decorated group showed differentiation in distribution through the ANOVA test – orange bichromes and polychromes. Modes of decoration outlined in this chapter will focus on the painted pottery, both on orange and non-orange backgrounds, of the Early Classic, Late Classic and Terminal Classic (examples of sherds from the Decorative Sample: Figure A.1 - Figure A.43).

7.4.1. Decorative Sample and Analysis Results

Table 7.27 Summary of decorated modal sample by time period and polychrome colour type.

Time Period	Orange Polychromes	Other Polychromes	Total	% of Total
Chub / Saquij I	5	6	11	4%
Saquij II	10	16	26	10%
Mo'	48	9	57	21%
Caal	107	46	153	57%
Cucul	11	9	20	7%
Total	181	86	267	100%

The biggest proportion of the decorated modal sample was composed of ceramics dated to the Caal phase (57%); the Mo' phase sample constituted 21%, Early Classic period sherds (Saquij I and Saquij II) constituted 14% and Terminal Classic ceramics 7% of the decorated modal assemblage (Table 7.27, Figure 7.10). The modal sample includes a total of 20 ceramic types which were divided into two bichrome/polychrome groups used in the multivariate analysis: orange bi/polychromes and other bi/polychromes (cream, buff, black, other background colours). There are seven ceramic types dated to

the Early Classic period (Saquij I and Saquij II), six ceramic types dated to Mo' phase contexts, ten ceramic types dated to the Caal phase and eight ceramic types dated to the Cucul phase.

The Early Classic decorated sample was the only assemblage which contained a greater number of non-orange bichromes and polychrome ceramic types (59%) than orange ones (41%), (Table 7.27, Figure 7.10). However, the overall polychrome ceramic sherd sample (including sherds not elected for the modal analysis) shows that the proportion of orange painted ceramics was larger (at 76%) than the non-orange ceramic types (at 24%) during the Early Classic period. The modal sherd samples dated to other chronological phases are composed in majority of orange polychrome types (from 55% to 84%) with a consistent minority of other colours of painted pottery (from 16% to 45%), (Table 7.27, Figure 7.10).

The overwhelming majority of the decorated modal sample with good sherd surface preservation was recovered from the contexts of the Acropolis complex (91%, 242 sherds). The examples of decorative modes from other locations at El Zotz are scarce; El Diablo accounts for 5% of the total modal sample (13 sherds), Las Palmitas – 2% (five sherds), Group K – 2% (six sherds), and El Tejón – less than 1% (one sherd), (Table 7.28). Such disparity in the available sample sizes is a direct result of variations in excavation strategies employed at different locations at El Zotz and the different qualities of the excavated contexts.

Table 7.28 Summary of decorated modal sample by time period and architectural complex.

Time Period / Complex	El Diablo	El Tejón	Acropolis	Group K	Las Palmitas	Total
Chub / Saquij I	10		1			11
Saquij II	3	1	22			26
Mo'			57			57
Caal			145	6	2	153
Cucul			17		3	20
Total	13	1	242	6	5	267

7.4.2. Geometric, Realistic, Textual Decoration Styles

Table 7.29 Proportions of geometric, realistic decoration styles and those incorporating glyph inscription within the decorative modal sample across complexes and chronological phases.

Time period	El Diablo		El Tejón	Acropolis			Group K			Las Palmitas		Total
	Geometric	Realistic	Realistic	Geometric	Realistic	Inscriptions	Geometric	Realistic	Inscriptions	Geometric	Realistic	
Chub / Saquij I	9	1		1								11
Saquij II	2	1	1	19	3							26
Mo'				36	9	12						57
Caal				87	34	24	3	1	2		2	153
Cucul				14	2	1				3		20
Total	11	2	1	157	48	37	3	1	2	3	2	267

As outlined in Chapter 4, first I investigated the frequencies and distribution of different design categories grouped into: geometric designs (G), realistic designs (R) and decorations with glyph inscriptions (I). The Early Classic period sample was relatively small, with 37 sherds in total. It contained 23 sherds from the Acropolis, 13 from El Diablo and only one painted sherd from El Tejón which had identifiable decorative elements (Table 7.29, Figure 7.14). The majority of the sherds, 84%, were classified to be decorated with geometric designs and 16% with realistic designs (Table 7.29, Figure 7.11). No sherds with glyph inscriptions were found. The sherds with realistic-style

decoration were less frequently found and could have been items of restricted distribution when compared to the vessels with geometric-style decoration. However, it has to be noted that the sherds decorated with realistic designs (and those with glyphic inscriptions) often also contain many geometric elements and motifs which all form part of complicated, elaborate decoration schemes. Thus, when studying samples of ceramic fragments, it is likely that some fragments classified into the geometric-style decoration group were part of larger designs and configurations with realistic, abstract and perhaps textual elements. However, it also signifies that geometric elements and motifs were present in various types of designs (not purely in geometric designs) while the realistic elements were relatively less frequent; they are also harder to identify on painted pottery.

The single sherd from the El Tejón complex, the smallest analysed complex occupied during the Early Classic period, was decorated with a realistic-style design. The statistical analysis of proportions (chi-square) of geometric and realistic designs found at the Acropolis and at El Diablo concluded that the relative frequencies of both design types were comparable at both complexes. Therefore, the occupants of all three complexes likely had very similar, if not equal, access to the vessels with both geometric and realistic elements. There is no evidence to suggest that the distribution networks of vessels decorated with different decorative styles (geometric or realistic) were different to one another; vessels with both types of designs were likely traded or exchanged along one (same) distribution network. There is no evidence of access being restricted to objects with specific design types over others. Of course, it is also possible that access to all objects with painted decoration was restricted during the Early Classic period, regardless of their design styles or motifs.

The Late Classic Mo' phase sample, found only at the Acropolis, yielded more painted sherds with diagnostic decorative elements than all of the Early Classic complexes combined. The majority of the designs were of geometric-style (63%), fewer were classified as realistic (16%). A further 21% showed evidence of glyphic inscriptions (Table 7.29, Figure 7.11, Figure 7.14). This is a relatively high concentration of sherds with textual content when contrasted with the Early Classic period which lacked glyphic inscriptions on ceramics.

A chi-square test was used to investigate whether the differences in proportions of geometric and other decoration (realistic combined with glyphic) between the Saquij phases and Mo' phase are statistically relevant. The results revealed that the null hypothesis can be rejected; thus, there was a significant difference in the distributions of various kinds of designs through time. However, when conducting the same test on the sample of geometric and realistic designs, and excluding sherds with glyphic inscriptions, the relative proportions were statistically similar across the two time periods. It was the presence of sherds with glyphs in the Late Classic Mo' phase assemblage which statistically differentiated the two assemblages.

During the Late Classic Caal phase, 95% of the sample was recovered from the Acropolis complex, 4% was excavated from Group K and 1% (2 sherds) came from the Las Palmitas complex (Table 7.29, Figure 7.14). The majority of the sherds were classified into the geometric design group (59%), 24% had realistic style designs and 17% had glyphic inscriptions incorporated into the decorations (Table 7.29, Figure 7.11). High levels of surface erosion and fragmentation of ceramic material excavated at Las Palmitas did not allow me to select a larger sample for surface design classification from this complex. The small sample of Las Palmitas decorated sherds was excluded from further statistical analyses. The statistical chi-square test performed on the

assemblages from the Acropolis and Group K samples showed that the proportions of geometric, realistic and glyphic designs were similar across the two complexes during the Caal phase. The two sherds recovered from Las Palmitas exhibited realistic style designs. Thus, similarly to the Early Classic assemblage, the Late Classic Caal collection shows no relevant signs of disproportionate distribution of design types across the architectural complexes at El Zotz.

Moreover, the statistical test performed on the Acropolis Mo' and Caal samples showed no decorative differentiation between the chronological phases, meaning the distribution of different design types was at a similar level throughout both Late Classic chronological phases.

The sample of sherds dated to Cucul phase and exhibiting identifiable polychrome surface decoration was significantly smaller than the samples collected for every other time period. Only three painted Terminal Classic sherds in this sample came from Las Palmitas complex, the remaining 17 were recovered from the Acropolis (Table 7.29, Figure 7.14). 85% of the sample had the designs classified as geometric. This is a much larger proportion of geometric decoration than seen for the Late Classic period phases (59% in the Caal phase sample, 63% in the Mo' phase sample) and comparable to the proportion of geometric designs observed for the Early Classic period (84%). 10% of the sample was classified as having realistic style designs, and one sherd (5%) bore evidence of glyphic inscription on its surface.

No statistical comparative analysis could be performed on the Cucul sample because of the small sample size. The three painted Cucul sherds with identifiable decoration found at Las Palmitas were classified into the geometric-style design group, which is the most abundant design type throughout all chronological phases. There were three sherds from

the Acropolis complex classified into the realistic and glyphic design groups. It is possible that the presence of these types of designs at the Acropolis but not at Las Palmitas signifies differentiation in access to finely painted ceramics; however, due to the small sample size, any assumptions require more study. The techniques of decorating ceramic vessels diversified into other types of decoration (beyond painting) during the Terminal Classic; these included incising, relief and modelling, among others (outlined in Chapter 5). Thus, the decorative samples of solely painted sherds might not be the most representative sample of pottery decoration for the Terminal Classic time period. The comparative chi-square analysis of the Acropolis assemblage across the Mo', Caal and Cucul phases revealed no significant differences in the distributions of different design types. It is likely there was continuity in procurement of similarly valued objects through time at El Zotz.

Table 7.30 Proportions of decorative styles within orange and non-orange polychrome types.

Polychrome Type	Geometric	Realistic	Inscriptions
Orange Polychromes	65%	19%	16%
Other Polychromes	66%	22%	12%

The next step in the current analysis investigates the distribution of different design types within the orange and the non-orange polychrome groups. Orange background colour on polychromes and the geometric-style designs both appear much more frequently within the sample than other types of painted vessels. The orange polychrome decorated sample is composed in 65% of vessels with geometric designs, in 19% of vessels with realistic designs and in 16% of sherds with glyphic inscriptions (Table 7.30, Figure 7.12). The proportions within the non-orange polychrome sample are very similar, geometric designs constitute 66% of decorated sherds, realistic designs

constitute 22%, and glyphic inscriptions constitute 12% of the designs (Table 7.30, Figure 7.12). The statistical chi-square test confirmed there is no statistically relevant association between the design types and the background colour of the polychrome vessel. Similar proportions of different design types across the orange and non-orange polychrome groups were maintained throughout the chronological phases. There seemed to have been no preference for a specific design type to be painted more often on either orange or non-orange painted vessels.

7.4.3. Decorative Elements Analysis

So far, the analysis of ceramic decorative content provided little evidence for socio-economic differentiation across the El Zotz complexes. I decided to further investigate three specific decorative elements which required specialist knowledge beyond the craft of painting, or which showed aspirations towards possessing such knowledge.

The first set of elements scrutinised in more detail in the present analysis consist of glyphic inscriptions, including the presence of single glyph signs. Drawing, or writing, glyphs required the artist to be literate and aimed to convey a message through text which went beyond the messages conveyed through the visual aesthetics of the painted motifs.

The second set of decorative elements in the current analysis includes human figures and mythical beings. Examples of numerous ceramic vessels with human figures show they are often portrayed in the contexts of elite courts and during courtly events (Harrison and Andrews 2004, 123; Graham 2012, 428; Martin and Grube 2000, 15; Reents-Budet et al. 2000). Designs with supernatural beings often portray scenes from myths or scenes involving highest elites and royals in the presence of the deities (Reents-Budet 1994). Thus, the human and mythical elements on pottery vessels

indicate that the artist had the knowledge of myths, most probably from codices, they had insight into the courtly life and into the lives of royal families. Such knowledge, similarly to the knowledge of literacy, was probably not widely accessible to all artists or craftsmen. The production of these designs must have been limited to the people who were related to the highest elites (socially or by blood). The distribution networks of these kinds of vessels would have been likewise more restricted.

The third decorative element type under further scrutiny constitutes pseudoglyphs. Pseudoglyphs are geometric shapes designed to resemble glyph shapes, but are not actual writing signs. Pseudoglyphs are an example of imitation in ceramic goods production which suggests that real glyph designs were desirable enough to imitate. Pseudoglyph decorations on vessels were probably aspirational (for individuals and groups who could not obtain the desirable objects – vessels with authentic glyphs). The potters and artists who did not possess the knowledge to produce real glyph inscriptions could have more easily produced the aspirational decorations; thus, the process of production of certain designs was likely as much a status symbol as the finished designs themselves.

Table 7.31 Quantities of three selected decorative elements in the Decorative Sample dated to the Late and Terminal Classic phases.

Chronological Phase / Complex	Glyphs		Human / Mythical		Pseudoglyphs	Total
	Acropolis	Group K	Acropolis	Las Palmitas	Acropolis	
Mo'	12		2		2	16
Caal	24	2	7		7	40
Cucul	1			2	1	4
Total	37	2	9	2	10	60

All of the 39 sherds with glyph inscriptions identified during the analysis were dated to the Late and Terminal Classic periods. 31% of sherds with glyphs were dated to the Mo' phase, 67% were dated to the Caal phase and 1 sherd (3%) was dated to the Cucul phase (Table 7.31, Figure 7.13). During both of the Late Classic phases, the majority of the sherds decorated with glyphs were of orange polychrome types; other polychrome types with non-orange background were infrequent within the sample. During the Mo' phase, 83% of sherds with inscriptions were of orange polychrome types, and during the Caal phase it was 69%. The most frequently found orange ceramic type is Saxche-Palmar Orange Polychrome and it constitutes 63% of the Late Classic sherd sample at El Zotz decorated with glyph inscriptions. The most common non-orange ceramic type is Zacatal Cream Polychrome and it constitutes 21% of the Late Classic ceramic sample with inscriptions. The great majority of the sherds with glyphs (37 sherds) were found at the Acropolis complex and 2 sherds were found at Group K (Table 7.31, Figure 7.15).

The sample of sherds with painted designs of human figures and mythical scenes was relatively small and amounted to 11 sherds. Two out of these sherds were dated to the Mo' phase and nine were dated to the Caal phase (Table 7.31, Figure 7.13). Unlike the sherds with glyphic inscriptions, the majority of the sherds with human and mythical elements (eight in total) were classified into non-orange polychrome sherds. Six sherds were of Zacatal Cream Polychrome type dated to the Caal phase. Three sherds were of orange polychrome types, two of which were classified as Saxche-Palmar Orange Polychrome type. Thus, while the glyphic inscriptions were most commonly found on orange types, the human and mythical elements were more common on non-orange types; however, a much larger ceramic sample is needed to prove this association. Nine sherds were recovered from the Acropolis complex and 2 sherds were recovered from Las Palmitas (Table 7.31, Figure 7.15).

There were only 10 sherds with pseudoglyph designs found within the analysed decorated sample. This is significantly fewer than the number of sherds with authentic glyph inscriptions found at El Zotz. Two sherds were dated to the Mo' phase, seven sherds were dated to the Caal phase and one sherd was dated to Cucul phase (Table 7.31, Figure 7.13). Eight of the sherds were classified into Saxche Orange Polychrome type and two sherds were classified into Zacatal Cream Polychrome type. Similarly to the glyph inscriptions, the pseudoglyph decoration was more frequently found on the orange polychromes rather than other colours of polychromes. All of the sherds with pseudoglyphs were recovered from the Acropolis complex (Table 7.31, Figure 7.15).

The majority of the sherds with special selected decorative elements (glyphs, human figures and pseudoglyphs) come from the Acropolis complex. This is not a surprise as the great majority of the overall decorated sample comes from the Acropolis complex. Some of the sherds with human and mythical scenes and with glyph inscriptions were found outside of the Acropolis, for example in contexts of Str. M3-7 at Las Palmitas, and Str. K8-8 at Group K. The presence of these highly decorated vessels at other locations outside of the Acropolis suggests they were not exclusive to the Acropolis population group.

7.4.4. Decorative Complexity Analysis – Decorative PSI

The final line of analysis of the decorative content of painted vessels includes a quantitative analysis of the Decorative Production Step scores across the ceramic assemblages (as outlined in Chapter 4). This method derives from the method of Production Step Index analysis. The original method was adjusted to measure the amount of time, energy and skill dedicated to the production of surface designs with the use of a variety of decorative elements.

Each decorative element was given a score of one, which mirrors the Production Step Index method where each production step was given a score of one. An additional score of one was given to those decorative elements which required specialist knowledge to produce, such as glyphs and human and mythical scenes. To calculate the cumulative Decorative Production Step scores for El Zotz assemblages, I totalled the scores of all the decorative elements visible on each sherd for each architectural complex. For example, a vessel with design composed of lines (score of one), strings of dots (score of one), and glyphs (score of two) would have a combined score of four points.

I have added up the Decorative Production Step scores of all sherds for each complex during the three time periods, the Early Classic, Late Classic Caal phase and the Terminal Classic Cucul phase. The results were then divided by the total count of painted sherds in each assemblage to calculate the proportion of decorative complexity within each sample.

Table 7.32 Decorative Production Step Index scores for El Zotz architectural complexes.

Time Period	El Diablo	El Tejón	Acropolis	Group K	Las Palmitas
Chub/Saquij I, Saquij II	0.745	1.400	0.392		
Caal			0.561	0.103	0.123
Cucul			0.274		0.032

The scores for the Early Classic period (Chub/Saquij I and Saquij II phases) point to a pattern where the smaller the sample, the higher the decorative complexity score. El Tejón returned the highest decorative complexity score (Table 7.32); however, the sample is too small for a statistical analysis. There were only five bichrome and polychrome painted sherds recovered in total from the El Tejón complex. Only one sherd had the appropriate levels of surface preservation to allow for a decorative modal

analysis. This sherd scored seven points and resulted in a total Decorative PSI score of 1.400. The El Diablo complex had 13 sherds with preserved decorative information out of a total 51 bichrome and polychrome sherds (25%). Ten of these sherds scored up to three decorative points, two sherds scored seven points, there was also one sherd scoring four points. This resulted in an overall Decorative PSI score of 0.745.

Twenty-three sherds from the Acropolis had preserved decorative information out of a total of 158 painted sherds (15%). 35% of the sample (18 sherds) scored up to three points, and two sherds (9%) scored seven points. The remainder of the sample scored four and six decorative points. The resulting Decorative PSI score for the Early Classic Acropolis complex is 0.392. Thus, while the Acropolis sample was larger than the one from the El Diablo complex, it contained a smaller proportion of highly scoring designs (sherds with seven points) and larger proportions of designs scoring up to three decorative points. If we exclude the El Tejón result due to a small sample size, the El Diablo complex returned the highest Decorative PSI score for the Early Classic time period. This outcome complements the results of Production Step Index analysis, outlined earlier in this chapter, where the Chub/Saquij I ceramic collection from El Diablo showed higher concentrations of highly scoring pottery compared to the Acropolis assemblage (Table 7.1).

The Late Classic Caal phase sample with preserved decorative content has a highly unequal distribution of Decorative PSI results across the three complexes. Both Group K (six sherds) and Las Palmitas (two sherds) samples were too small to qualify for the statistical analysis. The highest score of decorative elements recorded for the Caal phase is a score of eight elements; this is higher than the scores recorded for the Early Classic period (where the largest score was seven points).

The ceramic sample with readable decorative elements recovered from the Group K complex and dated to the Late Classic Caal phase constitutes 6% of the total bichrome and polychrome sample of 97 sherds recovered from this complex. All the analysed sherds scored between one and three decorative points. This produced a Decorative PSI score of 0.103 for the Group K Late Classic Caal phase collection (Table 7.32). The two decorated sherds recovered from Las Palmitas had enough of the design information preserved to have scores of seven and eight decorative points assigned to them. Las Palmitas was given an overall Decorative PSI score of 0.123 for the Caal phase assemblage (Table 7.32).

The ceramic sample with preserved decorative elements content constituted 20% of the total painted bichromes and polychromes recovered from the Acropolis and dated to the Late Classic Caal phase. The sherds range in scores from one to seven points; 75% of these sherds (109) scored up to three points and 2% (three sherds) scored seven points. The total Decorative PSI score for the Caal Acropolis sample amounts to 0.561 (Table 7.32). The Acropolis Decorative PSI result is the highest among the Caal ceramic assemblages. Both of the other complexes, Group K and Las Palmitas, returned Decorative PSI scores similar to one another but much lower than the result calculated for the Acropolis complex.

Terminal Classic Cucul phase ceramics with preserved decorative elements were recovered from the Acropolis and Las Palmitas only. No preserved bichrome or polychrome design information was recovered from Group K Terminal Classic contexts. The preserved samples from the Acropolis and Las Palmitas constituted very small proportions of the Terminal Classic painted bi/polychrome assemblages, 11% (17 sherds from the Acropolis) and 2% (three sherds from Las Palmitas). The highest

scoring design for a Terminal Classic period totalled six decorative element points which is lower than the scores listed for the Early and Late Classic collections.

The Decorative PSI result for the Las Palmitas assemblage is 0.032; the three sherds from Las Palmitas complex used in this sample all score up to three decorative points. (Table 7.32). The decoration scores for the Acropolis sample range from one to six points. The majority of the Acropolis decorated sample, 82% (14 sherds), scored up to three points. The total Decorative PSI result for Acropolis assemblage amounted to 0.274 (Table 7.32), which is a higher result than the Decorative PSI calculated for the Las Palmitas complex.

7.4.5. Decorative Complexity Summary

Statistical tests performed on samples of sherds with preserved decorative content reveal no correspondence between ceramic types, or background colour of the vessel, and the design elements that were painted on the surface of these vessels. The distribution of various decorative element types, such as geometric motifs, court and mythical scenes, and glyph inscriptions, showed little to no variation across different architectural complexes at El Zotz for the different time periods analysed.

However, the quantitative analyses which measure the amount of production steps, or the amounts of design elements identified within vessel's painted motifs, reveal uneven distribution of 'scores' within the El Zotz individual assemblages (from the score of one to the score of eight). Nevertheless, the potential differences in values of objects, as reflected in the types of decorative elements on vessel's surface, did not affect the distribution of these objects across architectural complexes at El Zotz and through time. Vessels with simple designs and those with complex, composite scenes appear alongside each other. The analysis performed on the El Zotz ceramic sample gave no

evidence to suggest that complexity of designs on painted ceramics was a factor restricting their distribution. The implication is that the ability to acquire ceramics with elaborate decorative designs was not necessarily limited to certain households.

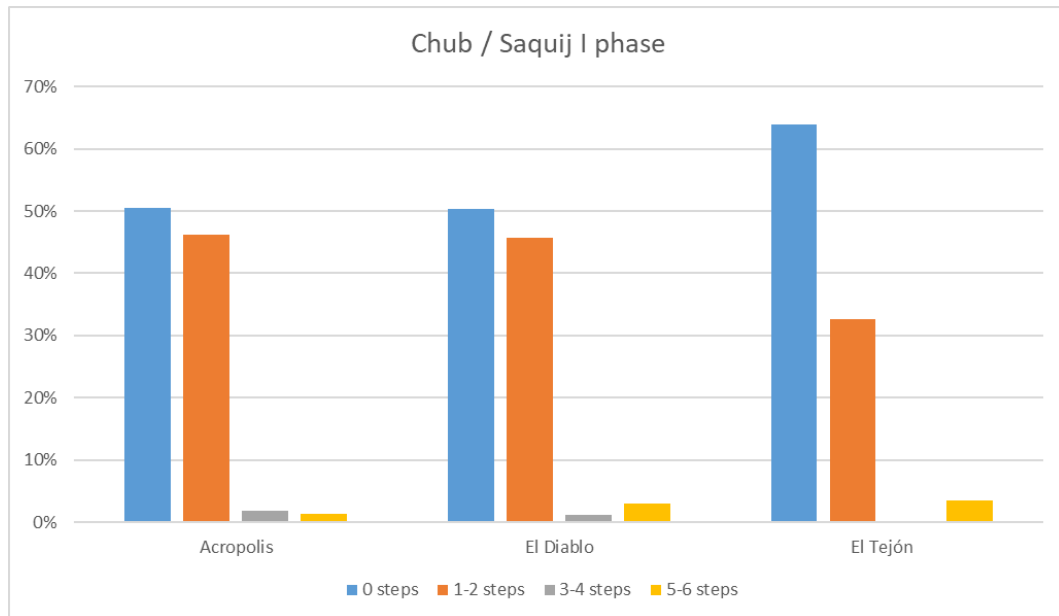


Figure 7.1 Proportions of sherds with different step scores across El Zotz complexes: Chub / Saquij I phase.

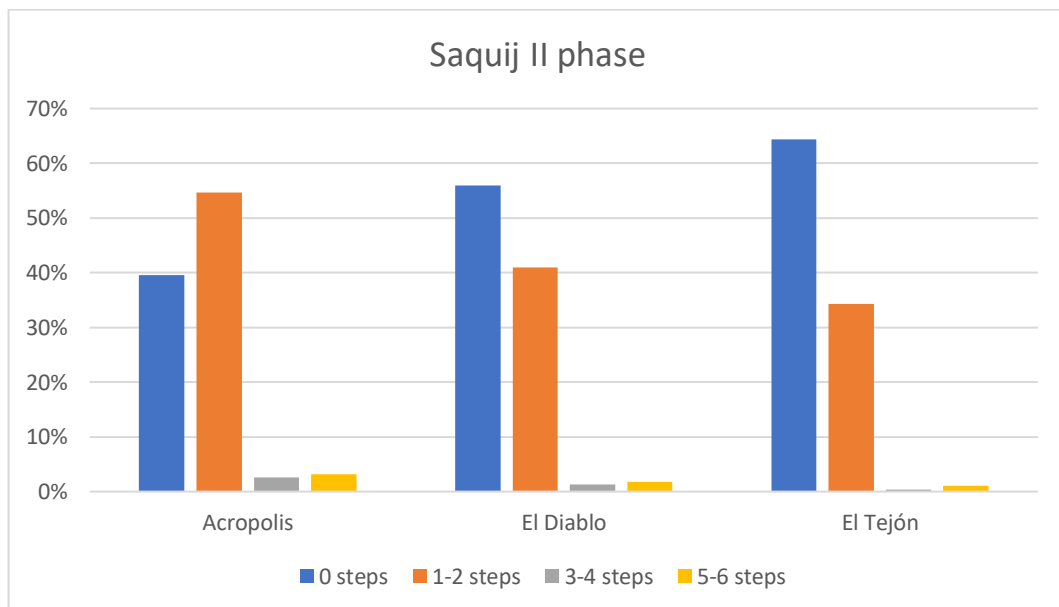


Figure 7.2 Proportions of sherds with different step scores across El Zotz complexes: Saquij II phase.

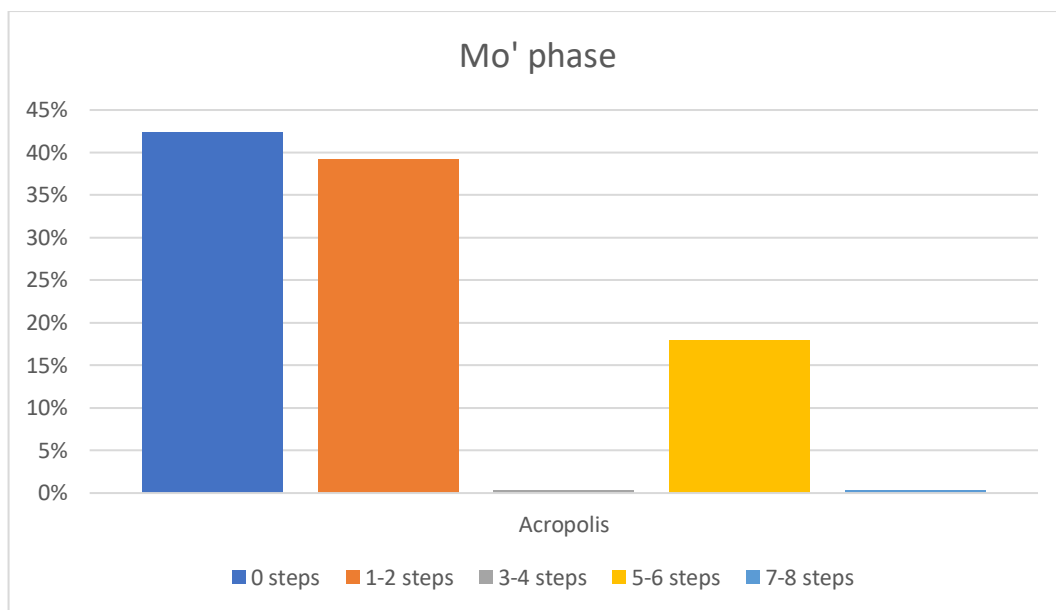


Figure 7.3 Proportions of sherds with different step scores across El Zotz complexes: Mo' phase.

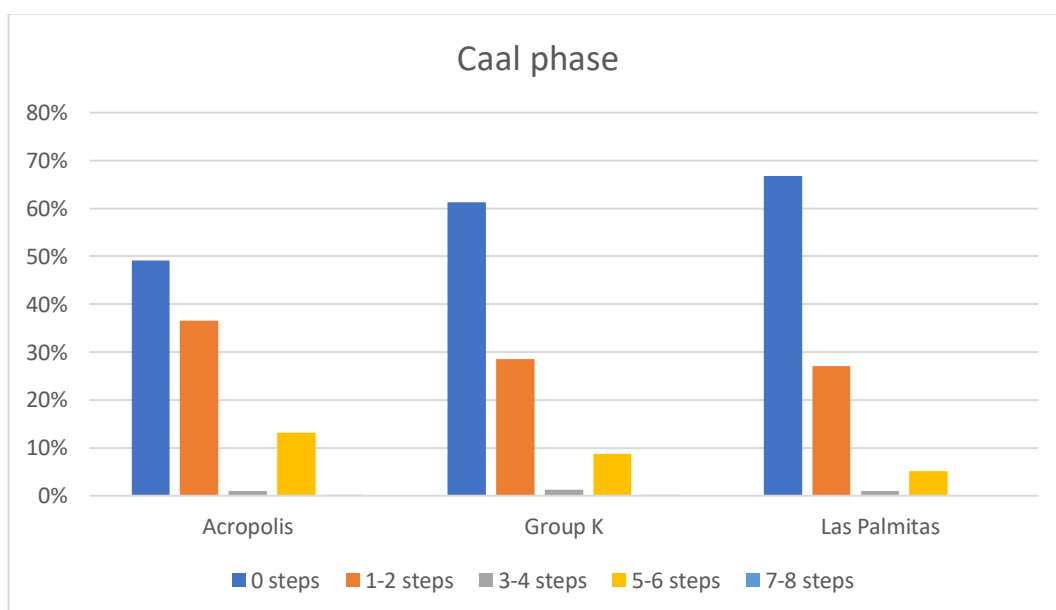


Figure 7.4 Proportions of sherds with different step scores across El Zotz complexes: Caal phase.

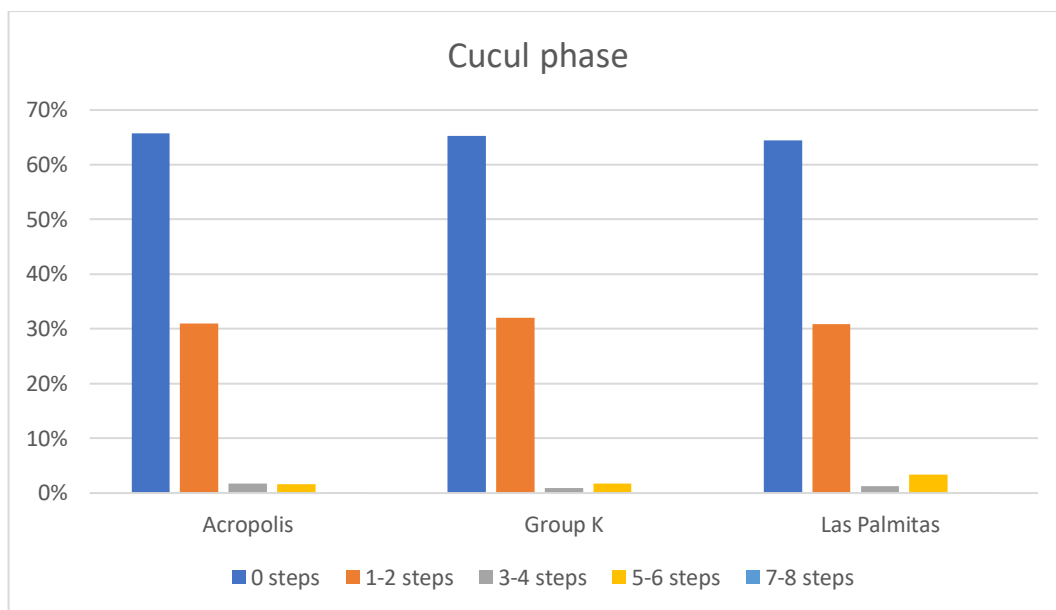


Figure 7.5 Proportions of sherds with different step scores across El Zotz complexes:
Cucul phase.

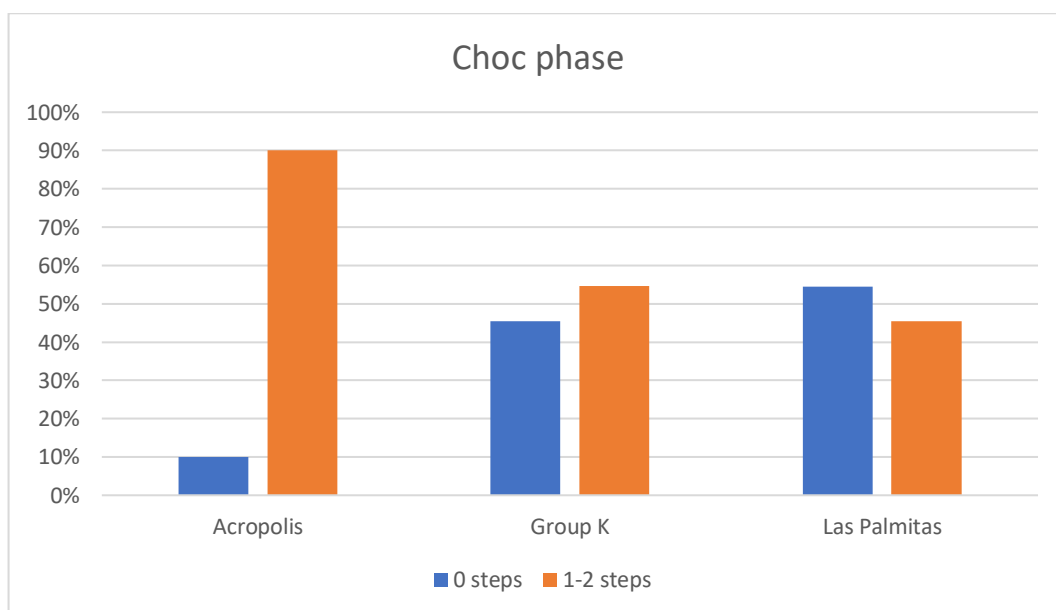


Figure 7.6 Proportions of sherds with different step scores across El Zotz complexes:
Choc phase.

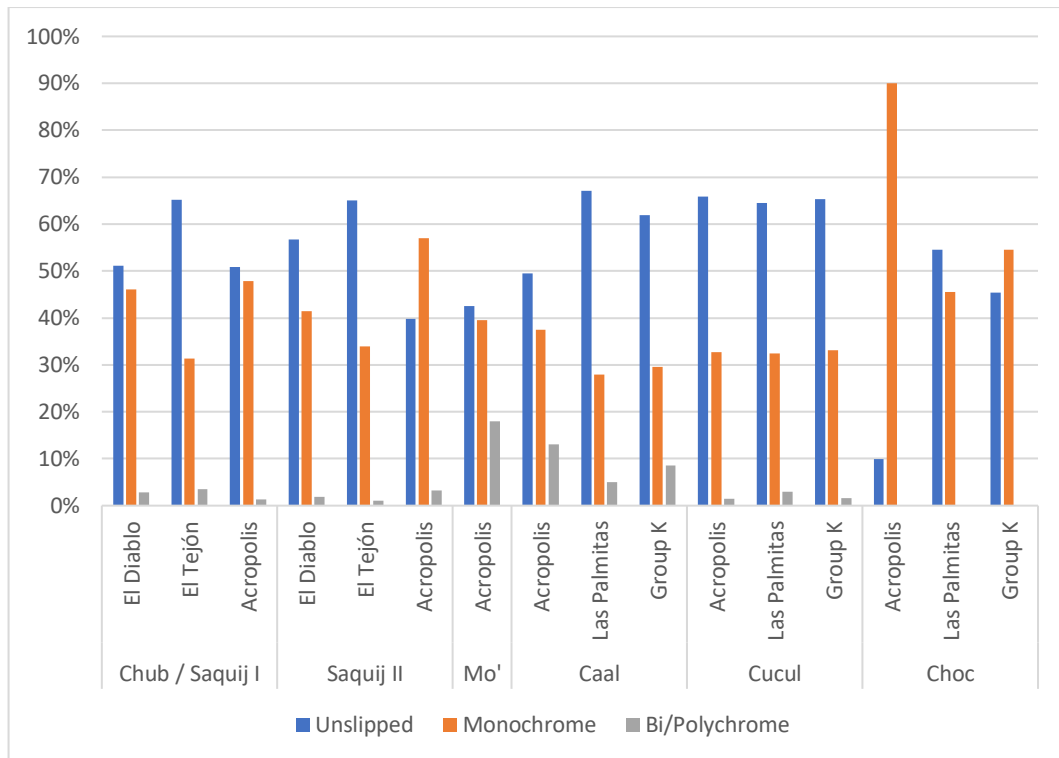


Figure 7.7 Surface Treatment Analysis level 1: Proportions of Unslipped, Monochrome, Bi/Polychromes categories across complexes and through time.

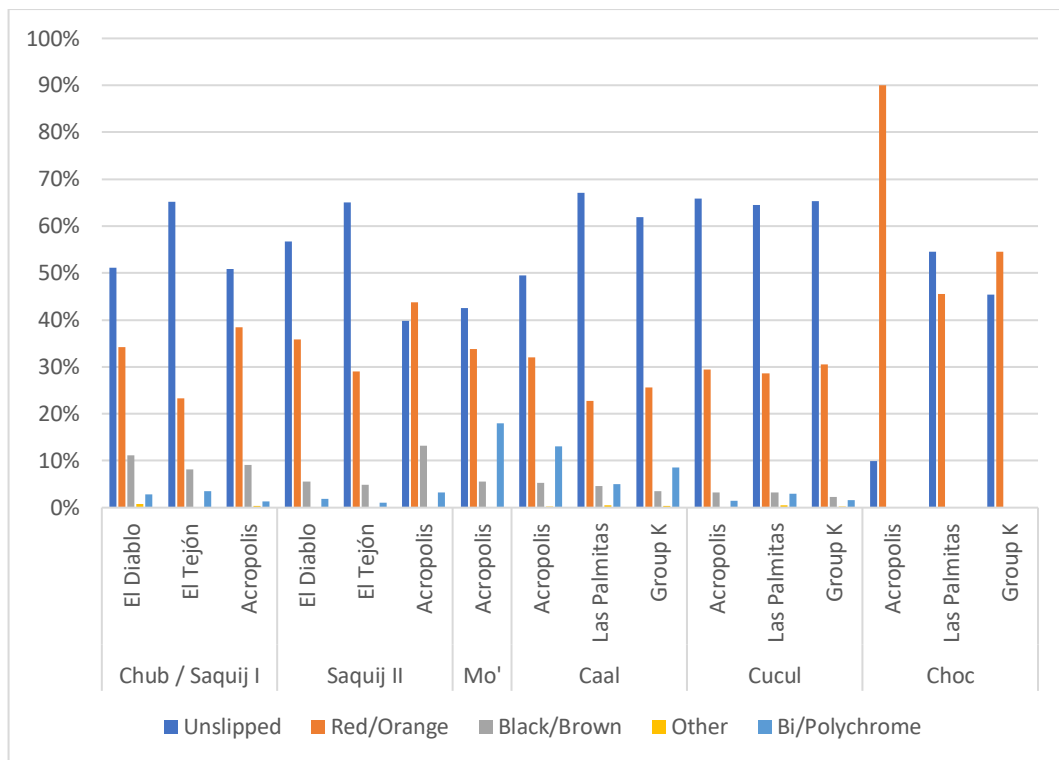


Figure 7.8 Surface Treatment Analysis level 2: Proportions of Unslipped, Red/Orange, Black/Brown, Other, Bi/Polychrome categories across complexes and through time.

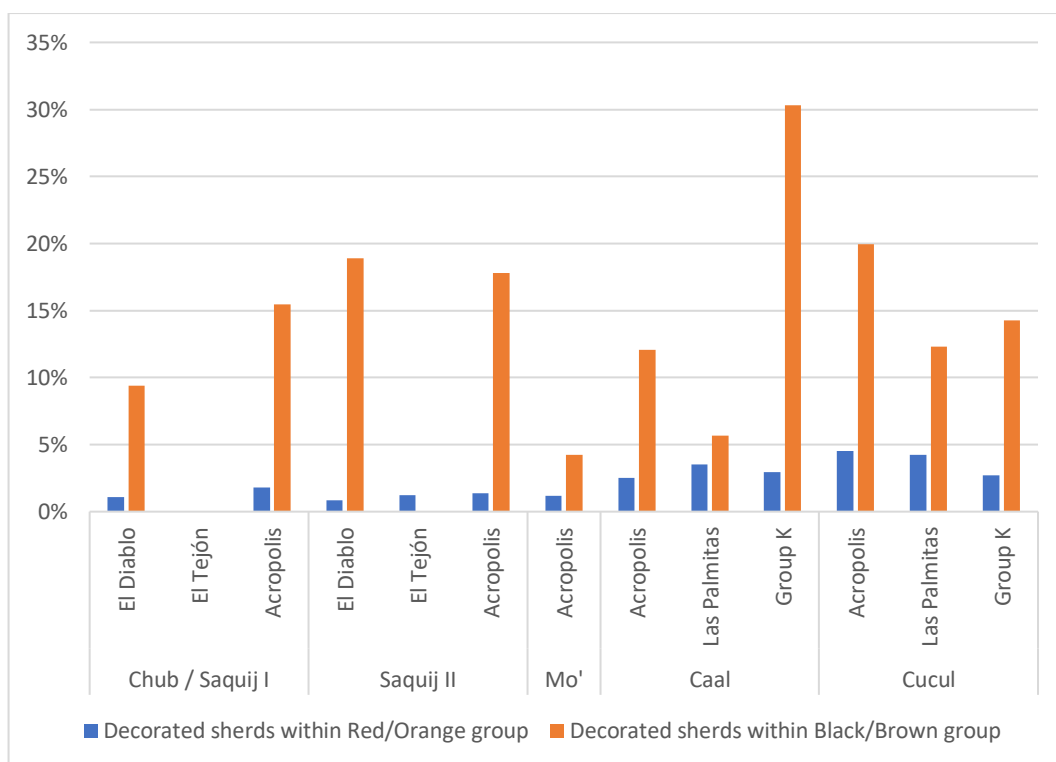


Figure 7.9 Proportions of decorated sherds in Red/Orange and Black/Brown colour groups trough time.

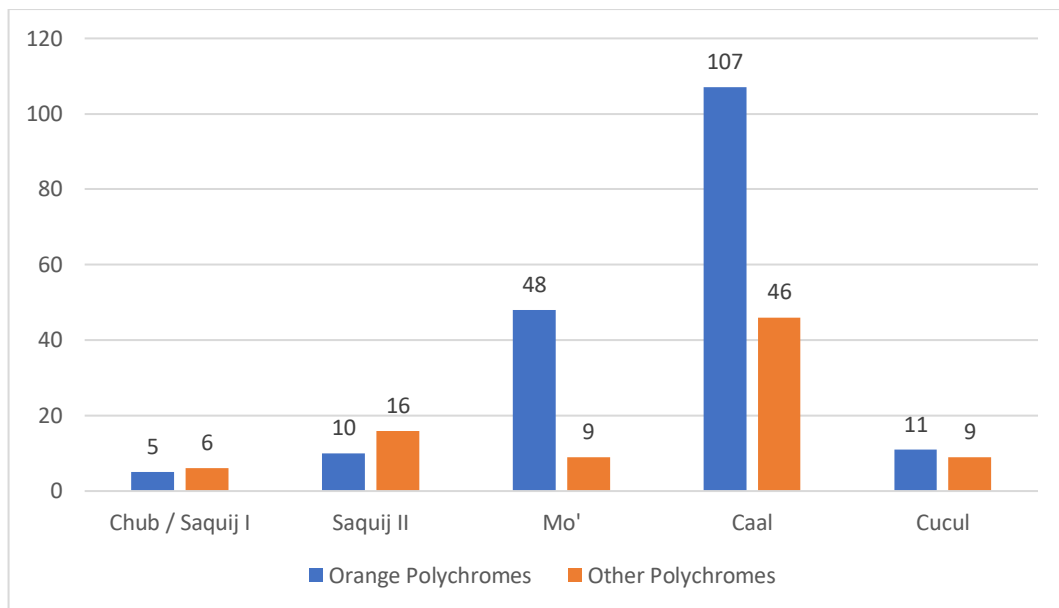


Figure 7.10 Quantities of Orange and Non-orange polychromes within the Decorative Sample across complexes and chronological phases.

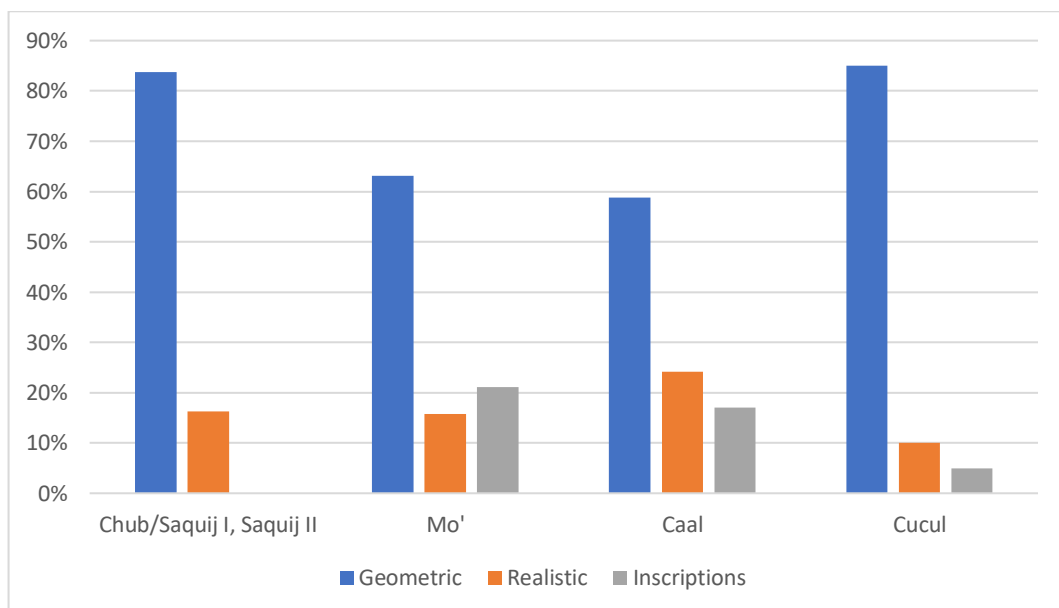


Figure 7.11 Proportions of decoration styles within the decorative sample across chronological phases.

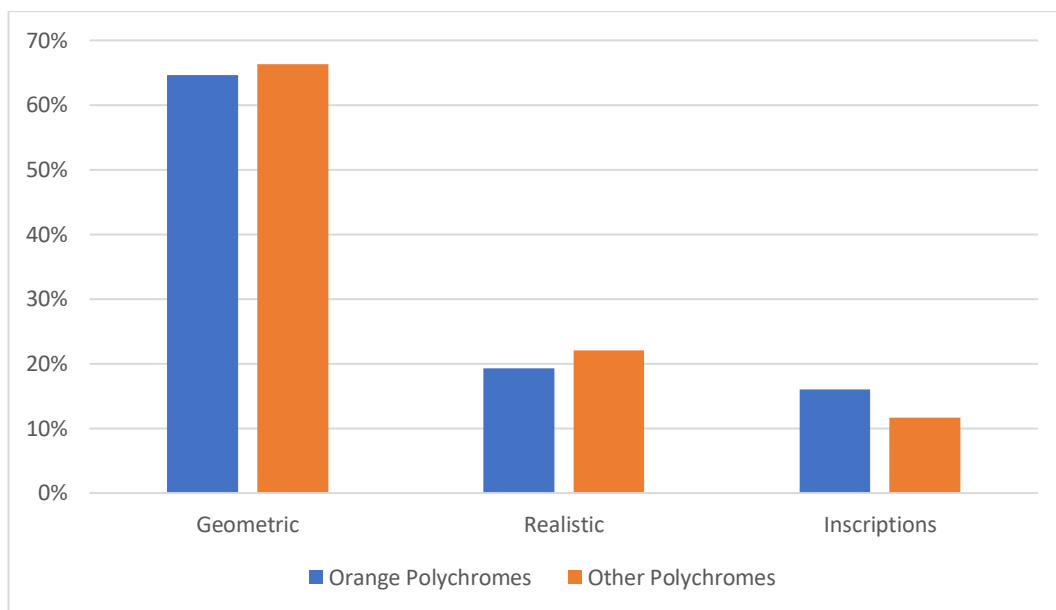


Figure 7.12 Proportions of different decorative styles within Orange and Non-orange polychrome types.

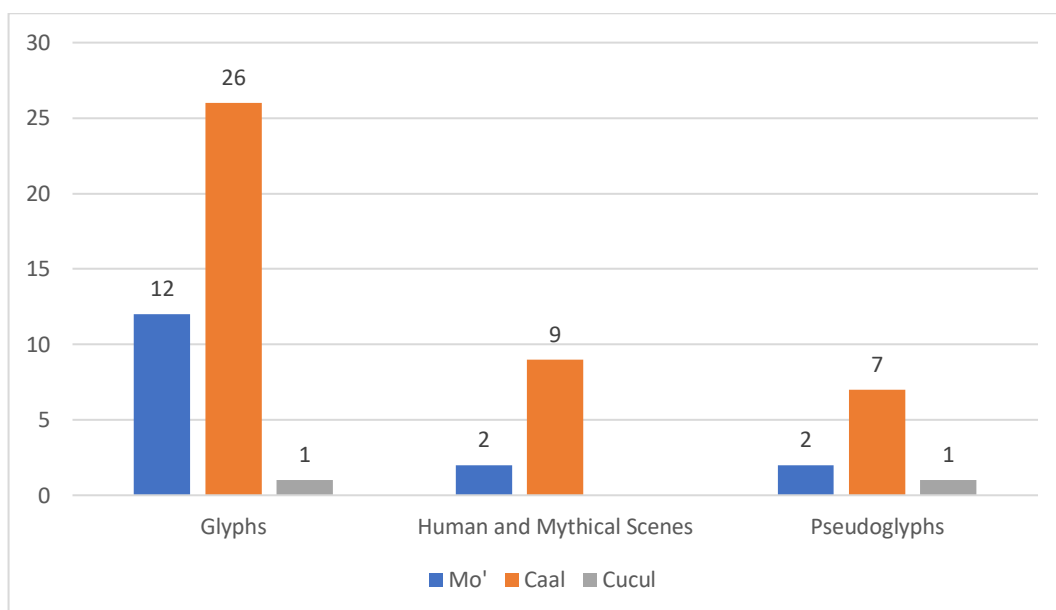


Figure 7.13 Quantities of three selected decorative elements (glyphs, human/mythical motifs, pseudoglyphs) in the Decorative Sample dated to Late and Terminal Classic.

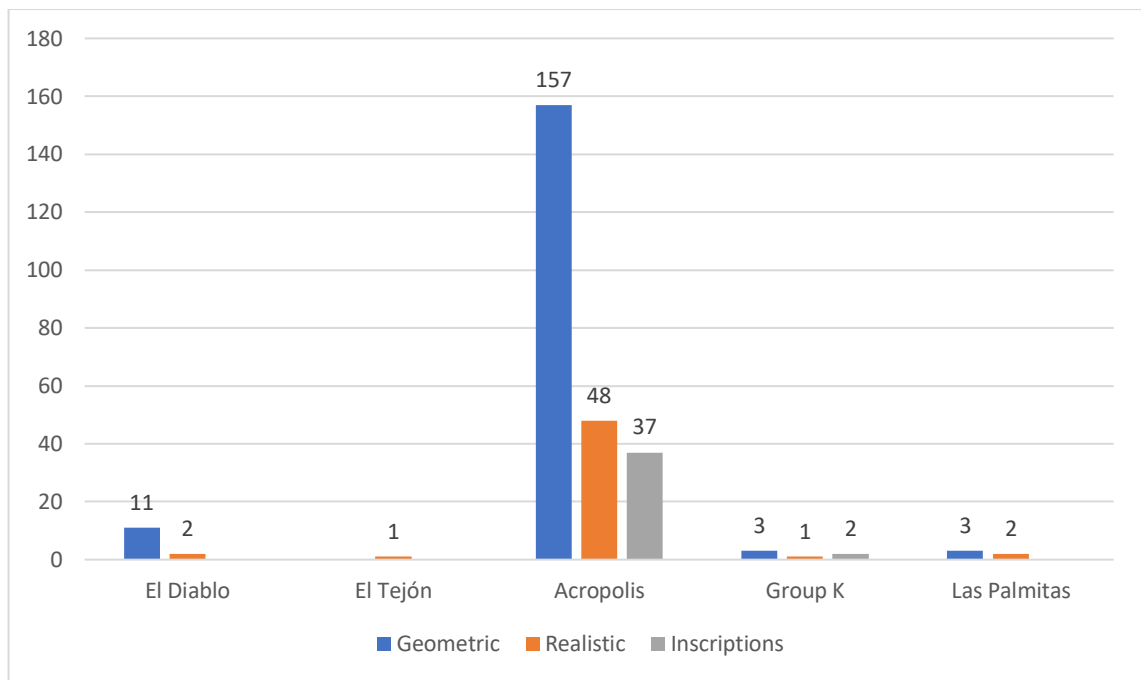


Figure 7.14 Quantities of decoration styles within the decorative sample across architectural complexes at El Zotz.

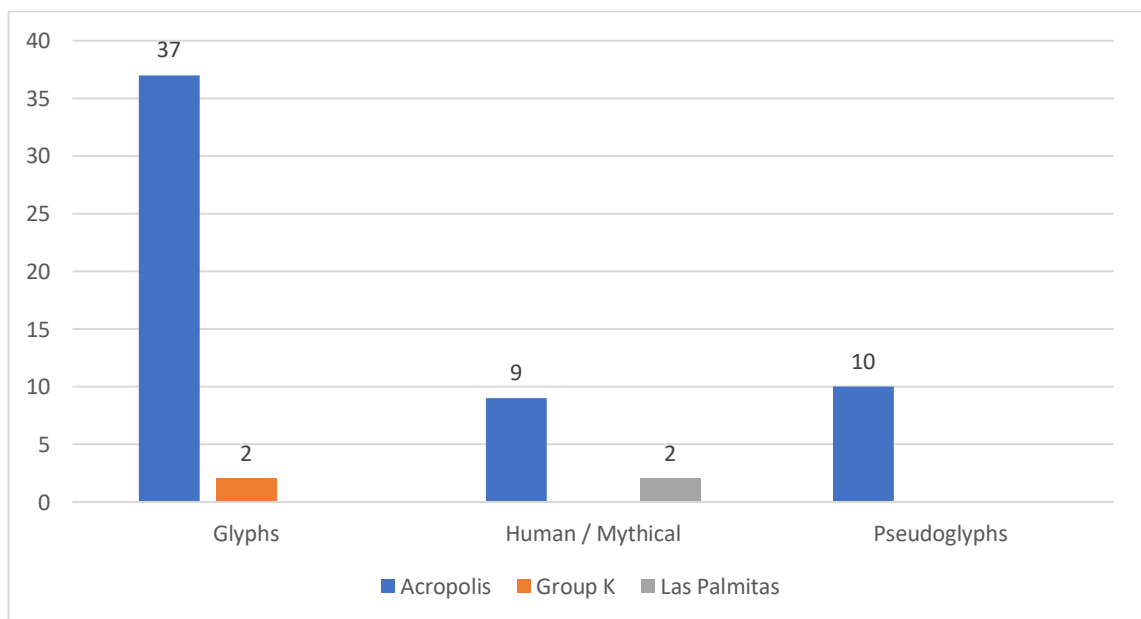


Figure 7.15 Quantities of three selected decorative elements (glyphs, human/mythical motifs, pseudoglyphs) in the Decorative Sample across complexes.

CHAPTER 8. Elites of El Zotz, Local Hierarchies, Economic Markets

8.1. Complete vessels and other artefact types: Integrating artefact analyses at El Zotz

The patterns visible through the analysis of ceramic remains are not free from broader contextual, cultural or social influences. The results of the analysis of ceramic sherds need to be contextualised in light of evidence of special finds, deposits of complete vessels found in primary contexts and combined with evidence of other, non-ceramic, artefact types. A holistic assessment of consumption behaviour of everyday items found in refuse deposits combined with items intended for special use will give a clearer view of the social and economic dimensions of populations occupying different complexes at El Zotz. The information on archaeological contexts from each structure at each of the analysed El Zotz complexes is once again examined to determine the content of other, non-ceramic objects. Special deposits and unique artefact finds are also integrated in this analysis. The results of the following artefact overview are combined with the results of ceramic analysis and are subsequently set within the framework of the El Zotz architectural patterns.

The content of other, non-ceramics, artefact types within the contexts of El Zotz complexes is derived from the records of El Zotz excavation reports (Meléndez 2008, Arredondo Leíva et al. 2008, Gillot Vassaux 2008a; Gillot Vassaux 2008b, Pérez Robles et al. 2009, Quiroa Flores 2009, Román and Carter 2009, Marroquín et al. 2011, Carter and Gutiérrez 2011, Román and Newman 2011, Aragón 2011, Carter and Gutiérrez 2012, Beltrán and Román 2012, Newman and Menéndez 2012, Piedrasanta 2012). The results are thus dependent on the quantities of the excavated materials as

listed in the reports. In several cases it has been noted that the records are partial and do not outline the exact quantities of the excavated artefacts; in other places, the excavated artefact content is omitted from the report altogether. Nonetheless, the great majority of the recorded archaeological contexts have a fairly detailed description of their artefact content. It is therefore possible to use these records in a comparative analysis and combined with the analysis of ceramic sherds.

8.2. Visibility of inequality through objects: Early and Late Classic

El Zotz

8.2.1. Elite groups at El Zotz during Early Classic phases: Chub / Saquij I (200 BC – AD 400) and Saquij II (AD 400 – 550)

One of the main objectives of this study is to investigate the wealth differences between elite groups at a Maya site of El Zotz. As the study is based on the patterns of object consumption among the elites, the results of this study are dependent on wealth inequality being represented through material objects. It is, of course, well-known that social and economic inequality is expressed in a variety of ways, material and non-material. The degree to which the material remains are indicative of social status is largely dictated by social and cultural conventions of the time.

The results of the ceramic analysis (PSI analysis, Table 7.1) at El Zotz show that the differences in wealth among ceramic assemblages of elite complexes varied through time and across architectural complexes. These differences could reflect socio-economic inequality among population groups or they could be the result of how the social conventions dictated wealth display through material objects (or lack of such displays). If assumed that the social conventions of wealth showcasing apply equally to all social groups during a given time period, then the relative differences in material assemblages

among different population groups would signify socio-economic inequalities during that particular time period. Such relative differences, however, are much more difficult to identify between different chronological time periods because the social conventions of wealth display could potentially be different at different points in time and therefore impact on the content of the artefact assemblages analysed.

During the Early Classic period the Production Step Indices for the three analysed complexes – El Diablo, El Tejón and the Acropolis – show only subtle differences (Table 7.1). The average PSI score for the whole of Chub / Saquij I phase is 1.010 with variation of up to 0.16 from the average. Thus, while El Diablo scores the highest PSI for this earliest analysed time period, all of the PSI results are generally very similar to one another. The average PSI score for Saquij II phase is close to the one for Saquij I (1.023); however, the variation from the average is higher, of up to 0.340 for Saquij II results (late Early Classic phase). This indicates that the differences between PSI scores calculated for El Zotz architectural complexes increased through time and are higher for contexts dated to the Saquij II phase than those dated to the Chub / Saquij I phase. As a result, the differences between the ‘values’ of assemblages of the highest-scoring complex during the Early Classic Saquij II phase – the Acropolis – and the lowest scoring complex of that phase – El Tejón - are greater than the differences calculated during the earlier chronological phase.

Inequality, and perhaps also differences separating social groups, seems to have increased from the early to the late facet of the Early Classic as reflected in increasing concentration of high-value goods in one location, as opposed to an even distribution of high-value objects among different locations at the site. However, the widening gap between PSI results of Saquij I and Saquij II phases is not statistically significant. Chi-square statistical analysis (Table 7.19) concluded that the changes observed for ceramic

assemblages between the early and late facets of the Early Classic cannot be attributed with any certainty to social or economic variables. The distribution of high-value ceramic objects is, thus, uniform enough throughout both parts of the Early Classic period to show no statistical differentiation in concentration of high-value ceramic goods.

Table 8.1 Non-ceramic artefact assemblages recovered from Chub / Saquij I (Late Preclassic / Early Classic) contexts at El Zotz.

Artefact Material	Acropolis	El Diablo	El Tejón	Total
Flint	172		7	179
Fauna	148	7		155
Human Remains	1	49		50
Stucco	6	28	3	37
Shell	8	10	5	23
Obsidian	18	1	3	22
Vessel	1	19		20
Jade		2	11	13
Snail		7	3	10
Hematite		4		4
Necklace		3		3
Stone		1	2	3
Copal		3		3
Pyrite		1	2	3
Plant Remains		1		1
Wood		1		1
Quartz		1		1
Ceramic Sherd Count Reference	1,902	833	86	2,821

The assemblages of other, non-ceramic, artefacts indicate patterns of varied object distribution among the three Early Classic complexes. El Diablo, the complex with the highest PSI score for the early facet of the Early Classic period, also contained the largest variety of other non-ceramic artefact types. Sixteen different kinds of artefact materials were recovered from Chub / Saquij I contexts at El Diablo. Stucco, shell, animal bone remains, hematite, copal, jade and a number of other artefact materials

were recovered from El Diablo, and some in significant quantities (Table 8.1). Human remains were found in especially high quantities at El Diablo Saquij I contexts, along with complete vessels. This is all thanks to the preservation and safe recovery of a number of special deposits, such as caches and a non-looted tomb chamber.

The Acropolis assemblage of non-ceramic artefacts was much less varied and contained in majority flint fragments, animal bone and obsidian fragments. All the materials found in great quantities at El Diablo – shell, stucco, complete vessels, human remains – were found in very small quantities at the Acropolis Saquij I contexts (Table 8.1). El Tejón, on the other hand, contained a mixture of high quantities of precious materials such as jade and shell and high quantities of utilitarian materials such as flint (Table 8.1). The tomb chamber found at El Tejón Str. H6-2, dated to Saquij I or II, contained elaborately crafted shell earspools with mosaic made of jade (Carter et al. 2012, Figure 1.7). Such items are thought to have been precious objects in the Maya culture. Thus, even though the quantities of high-value ceramics or other high-value objects are low in comparison to El Diablo or Acropolis assemblages, the presence of such unique objects as the shell and jade earspools makes the assessment of El Tejón's social status particularly challenging.

The El Diablo caches of red slipped bowls with outflared walls and larger unslipped bowls with outflared and outcurved walls, all contained human bones within them and all were found in the early contexts of Temple F8-1 (Houston et al. 2015b). The same kinds of bowls were found in significant quantities in other secondary contexts at El Diablo and also in an El Diablo rubbish pit. They exhibited consistency in slip, paste, and vessel form which suggests a standardized and intensive production of these kinds of vessels at El Diablo, at least in the historical moment surrounding the construction of Str. F8-1's first phase (Czapiewska-Halliday in press). In contrast, these exact kinds of

vessels are near-absent from ceramic assemblages from other El Zotz complexes. The complete vessels found in the El Diablo tomb showed varied levels of decorative complexity. Some showed extremely elaborate clay modelling into animal or human representations and were painted or incised with complex designs (Newman et al. 2015). Similarly, other non-ceramic artefacts found in the tomb chamber range from utilitarian objects, such as obsidian blades, to artefacts made of precious materials like jade. Also recovered were decorative materials in their raw form, such as the hematite cubes which were likely used to create dyes, as well as final decorative objects such as shell bells or a jade mask, all accessories buried with the individual for whom the tomb was created.

Table 8.2 Non-ceramic artefact assemblages recovered from Early Classic Saquij II contexts at El Zotz.

Artefact Material	Acropolis	El Diablo	El Tejón	Total
Flint	321	38	15	374
Fauna	97			97
Obsidian	39	11	4	54
Stucco	41	3	3	47
Shell	10	1	3	14
Vessel	1	7		8
Human Remains	7			7
Stone	2	4		6
Snail	1		3	4
Green Stone			1	1
Floor Stucco	1			1
Ceramic Sherd Count Reference	4,318	2,374	289	6,981

During the Saquij II phase, the variety of non-ceramic artefact types decreased compared to Saquij I. The Acropolis showed the greatest variety of material types (ten) and was also the highest PSI scoring architectural complex of the Saquij II phase. El Diablo and El Tejón both had six different types of non-ceramic artefact types, albeit

the types were different in each location. Artefact types found in largest quantities in all three complexes (in various types of contexts) were flint fragments, animal bone fragments and obsidian fragments (Table 8.2). All of these types can be classed as domestic and utilitarian in nature (stone tools, obsidian tools, animal bone tools and food refuse), rather than luxury or high-value items. Nonetheless, more precious materials, such as decorated stucco, shell fragments or green stone were also found in various locations across the three architectural complexes.

Thus, the ceramic and non-ceramic artefact types of both utilitarian and non-utilitarian function are being found in primary as well as in secondary refuse contexts (Schiffer 1972, 161) at Early Classic El Zotz. The assemblages from special deposits, such as tomb chambers, are just as likely to contain a varied array of object types – domestic, utilitarian, luxury, rare and unique – as the refuse assemblages.

Moreover, the presence of seemingly simple and utilitarian objects in a rich royal tomb (Newman et al. 2015, 96-119) signals that objects' values were created through the contexts of their use and their purpose as much as through their aesthetic appearance and the level of craftsmanship dedicated to the production process. There seems to have been at El Zotz a high-skilled workforce that produced some of the most striking and elaborately decorated pieces within the entire El Zotz collection. Examples of vessels from the El Diablo royal tomb include, for instance, an Urita Gouged-Incised quatrefoil vessel and lid decorated with deities, glyphs and with a centrally placed effigy handle modelled into a howler monkey head (Vessel 1, Newman et al. 2015, 88-94), a Lucha Incised tetrapod and lid with iconographic designs and modelled elements made to resemble a turtle, (Vessel 17, Newman et al. 2015, 124-129), a Zotz Red Polychrome vessel and lid with painted iconographic and glyphic elements and effigy handle modelled into a cosmic howler monkey (Vessel 18, Newman et al. 2015, 130-134), and

a Zotz Red Polychrome vessel and lid with painted and modelled elements of a peccary (Vessel 22, Newman et al. 2015, 142-144). The production of ‘high-value’ goods, as understood by the amount of work and skill required for the production process, was flourishing at El Zotz during the Early Classic period, during both the early and the late phase. There must have existed demand for these kinds of objects, a demand which seems to have been driven by all elite households, higher elites and lower elites, with relatively equal force. This likely created the observed relatively even distribution of high-end objects across different architectural complexes.

Whether these kinds of elaborately-decorated objects were produced and acquired with the intention to display wealth, social superiority or political authority is not clear. The fact that elites must have used utilitarian and domestic objects alongside more luxury and elaborate ones for seemingly similar purposes has always been a logical deduction. However, the fact that objects of various step scores (from undecorated to elaborately decorated pieces) are used within special contexts of social and political display, such as the contents of the royal tomb, confuses the distinction between ‘domestic’ and ‘luxury’ realms we might wish to assign to these objects through our modern conventions.

The quantities and proportions of the ‘high-value’ goods, the ones with higher production step scores, are generally lower in the Early Classic contexts compared to the Late Classic (PSI scores are lower for complexes occupied during the Early Classic period compared to the PSI scores for contexts dated to the Late Classic, Table 7.1, Table 7.20). The production of high-value ceramic goods, thus, did not reach the mass-production volumes until the Late Classic. The lower quantities of ceramics in the Early Classic period might also reflect smaller population size at El Zotz compared to the Late Classic. Ceramic production of high-value goods might have involved different modes of production than during the Late Classic time period. During the Early Classic,

evidence suggests that the potters and artists responded to a small-scale elite demand (hence the small quantities of high-value pots, Table 7.1, Table 7.20), whereas during the Late Classic, the production adapted to the demands of much larger scales. Combined with the fact that the high-value as well as lower-value ceramics were distributed fairly evenly across the Early Classic complexes (for instance, the non-orange bi/polychromes, Table 7.24; the polychromes with realistic designs, Table 7.29), all the arguments suggest an equal access to ceramic objects and an unregulated circulation of these objects within the society. One implication is that high-value and lower-value objects were distributed along the same trade and exchange networks or at least along networks accessible to most or all segments of society.

The very elaborately decorated vessels contrast with the plain, undecorated, pots and it is hard to believe that the elaborately decorated vessels would have been acquired for reasons other than an opulent display of iconographic or glyphic designs. Thus, the display value of these objects is unquestionable. However, how the display of these objects related to one group's wealth and social status relative to other population groups cannot be assessed because there is no statistically significant difference in their distribution across different complexes during the Early Classic period (Table 7.19). It is very probable that other non-material aspects of the social, economic and political lives of elites played a more crucial role in how elites asserted and maintained their positions in society. The material objects of unique display value might have functioned as facilitators of social communication under cultural conventions of the time rather than direct symbols of social hierarchy.

8.2.2. Elite groups at El Zotz during Late Classic phases: Mo' (AD 550 – 700) and Caal (AD 700 – 850)

Significant changes in settlement patterns and PSI scores were observed during the transition from the Early to the Late Classic period. Different architectural complexes were inhabited during the Late Classic chronological phases – the Acropolis, Las Palmitas and Group K – than during the Early Classic and the PSI scores are overall much higher during the Late Classic than during the Early Classic phases (Table 7.1). The most significant difference is observed for the Acropolis complex during the early facet of the Late Classic period, Mo' phase, for which a PSI of 1.870 was calculated. This is, however, based on a much smaller ceramic sample compared to other chronological phases (Table 5.2). The Mo' phase sample was recovered from only three locations at the Acropolis core structures (Strs. L7-1, L7-3, L7-6) and contained a relatively high proportion of highly scoring ceramics, especially polychromes.

The Caal phase PSI results present a very different picture compared to the Early Classic phases. The Caal phase average PSI score is 1.185 (14% higher than Saquij II phase average result) and the deviation from the average is up to 0.365 (7% higher than the maximum deviation from average for Saquij II phase). These results signal a deepening inequality in distribution of high-value objects across El Zotz complexes, which in turn can be associated with deepening social inequalities across different population groups or changes in the ways ceramic objects were acquired and consumed by El Zotz elite households.

Table 8.3 Non-ceramic artefact assemblages recovered from Late Classic Mo' contexts at El Zotz.

Artefact Material	Acropolis
Flint	167
Fauna	134
Stucco	79
Shell	40
Obsidian	19
Human Remains	7
Figurine	2
Vessel	2
Stone	2
Snail	1
Ceramic Sherd Count Reference	1,762

The analysis of other artefact types recovered from Late Classic contexts at El Zotz shows a pattern not dissimilar to that illustrated above for the Early Classic phases. The Mo' phase contexts yielded large amounts of objects associated with primary production activities, such as flint fragments, animal bones and obsidian. There was also a number of artefacts associated with non-production activities such as decorated stucco, shell, figurines and complete vessels; these however appeared in smaller quantities (Table 8.3). Large quantities of utilitarian artefacts seemingly contrast with the very high ceramic PSI score for Mo' phase but reaffirm the idea that a multitude of different activities took place at Maya elite complexes.

Table 8.4 Non-ceramic artefact assemblages recovered from Late Classic Caal contexts at El Zotz.

Artefact Material	Acropolis	Las Palmitas	Total
Flint	1,536	392	1,928
Fauna	230	2	232
Shell	39	56	95
Obsidian	72	16	88
Human Remains	66	9	75

Artefact Material	Acropolis	Las Palmitas	Total
Stucco	42	6	48
Stone	9	8	17
Vessel	8	1	9
Figurine	3	1	4
Wattle and daub		2	2
Mica	2		2
Jade	1	1	2
Green Stone		1	1
Ceramic artefact	1		1
Ceramic Sherd Count Reference	6,056	2,831	8,887

The Caal phase contexts also contained large amounts of domestic-related artefacts at both the Acropolis and Las Palmitas complexes; no data were available for Caal contexts from Group K. Both the Acropolis and Las Palmitas complexes yielded high quantities of non-utilitarian materials and artefacts (materials and objects not intended for primary domestic production) compared to other chronological phases; these artefacts include modelled stucco, figurines, mica, jade, green stone and the like (Table 8.4). There were also a number of special deposits at both of the large Late Classic complexes: one Mo'-phase burial and three Caal-phase burials at the Acropolis, one Caal-phase burial at Las Palmitas, two Caal-phase caches at the Acropolis and one at Las Palmitas (Table 6.2). The offerings in all of the burials and caches were relatively plain, and low-scoring compared to some of the elaborately-decorated sherds found among refuse material. The ceramic vessels were in the majority monochromes, with only a few examples of polychrome types: two Saxche-Palmar Orange Polychrome vessels found as a cache in a lip-to-lip position at temple L7-11 (Arredondo Leiva et al. 2008, 77-81; Czapiewska-Halliday et al. in press; Table 6.2) and one vessel found in a looters' tunnel at Las Palmitas, probably left behind from one of the looted tomb chambers and which could have been a burial accompaniment (Carter and Gutiérrez 2011, 94). The aforementioned cache found at Str. L7-11 also contained artefacts such

as mica, a jade pectoral, a *Spondylus* shell pendant and 51 shark teeth. Another Caal-phase cache from the Acropolis Courtyard 2 contained eccentric obsidian and flint fragments among numerous obsidian and flint blades and cores (Table 6.2). By comparison, Las Palmitas offerings are fewer in quantities and less varied in artefact types (Table 6.2). Thus, in terms of elite ritual and lineage-related activity, more activity was happening at the Acropolis than at Las Palmitas. This can also be correlated with higher PSI score calculated for the Acropolis complex, but is most likely associated with the sheer volume of construction projects being carried out in the central precinct of El Zotz compared to other parts of the site. The large volume of construction projects at and around the Acropolis (see Chapter 6) must have been accompanied by population increase in the area, intensified ritual activity over time, and depositional activity in general, at these locations.

The frequency of appearance of high-scoring ceramic types, most notably the polychromes, increased from the Early to the Late Classic. The orange as well as cream and buff-background polychromes all show a level of standardisation in forms, shapes and decorative designs (Czapiewska-Halliday et al. in press). This signals a change in mode of production from small-scale artisan production to large-scale standardised mass production. Inventing new, more efficient modes of production of objects makes these objects more easily accessible. As they begin to circulate in larger volumes, they may at the same time lose the sense of exclusivity, luxury or high-value association and meaning – a pattern seen throughout ancient and modern production evolutions (for example, Heilbrun and Gray 2001; Hommes 2013, 10-12).

The widespread appearance of polychromes in relatively large quantities across different complexes signals that polychromes were probably produced on much larger scale in the later facet of Late Classic (Caal phase) than during the earlier time periods

(Table 7.20, Table 7.21, Table 7.22) and were accessible through popular means of distribution, perhaps traded at markets. The large quantities of polychrome ceramics within Caal assemblages increase the overall visibility of painted ceramics across the site. The increased visibility might indicate cultural and social shifts which dictate a certain level of showmanship within the material possessions, especially the serving vessels used during social events.

The notable increase in frequencies of high-value objects (Table 7.1, Table 7.20) can also signal, apart from cultural and depositional changes, an actual increase in elite prosperity at El Zotz towards the latter half of the Late Classic period. The high-value objects of the Caal phase, in the majority polychromes, are of both local and non-local production (Czapiewska-Halliday in press; Figure A.10, Figure A.32, Figure A.33). Several ceramic types found in the contexts of the Acropolis and Las Palmitas are associated with other Maya sites and regions and were most likely traded into El Zotz or gifted to the El Zotz elite households. These types are, for example, polychromes decorated using resist-reserve technique, such as Mataculebra Cream Polychrome or Santa Rosa Cream Polychrome (Muñoz 2006, 237-245) which originate in the Petexbatún region, or the Ik' style polychromes which were originally produced at Motul de San José (Halperin and Foias 2010; Figure A.8, Figure A.9). The bulk of the polychromes, of the Petén types Saxche-Palmar Orange Polychrome and Zacatal Cream Polychrome were likely produced locally at El Zotz and in its vicinity. The Neutron Activation Analysis of a sample of orange polychromes from the Late Classic Acropolis contexts showed their paste composition was identical to the composition of Tinaja group red-slipped vessels, which are normally associated with domestic and utilitarian activities and were most likely produced by local craftsmen (Czapiewska-Halliday et al. in press; Ronald Bishop, personal communication, 2012). Thus, it is proposed that the

intensification of polychrome and high-value object production occurred at the site of El Zotz alongside intensified trade and exchange of objects produced at other sites. This can be associated with growing prosperity of the whole El Zotz society, at all economic levels, not exclusively at the top social strata.

Large quantities of polychrome ceramics found in the central precinct of El Zotz, at the Acropolis and Group K, and to some extent at Las Palmitas, indicate there was a high demand for such goods across many types and sizes of households within the elite stratum. A crucial question is - when a specific type of object starts being produced and consumed in increasing numbers, does it lose its social value along with its economic value? By allowing greater numbers of an artefact type to flood the market, the Maya possibly devalued the polychromes from being luxury objects and the economic value of these objects decreased. Or perhaps the value of high-scoring polychrome painted ceramics changed, similarly to how the 'monetary' value of feathers outweighed their 'social' value at Aztec markets over time (Cummins 2012, 419-420). As these objects became more commonly found in higher and lower elite household assemblages, it is only logical that the original social functions of these vessels (display, gift-giving, bond-forging) was also likely altered through time. As a greater part of society (growing high-elite group and the lower elites) adopted the tastes for luxury objects (Appadurai 1986, 44-45; Elson and Covey 2006, 10) they must have altered the original social and political values of these products and assigned their own meanings to them.

Perhaps the growing number of elite-associated objects signals a growing lower elite or middle class at El Zotz: a social class which aspired to and embraced the high elite styles. As discussed in Chapter 2, the Late Classic period was characterised by significant growth in the elite households in many Maya cities, increasing hierarchy of titles and increasing presence of elite imagery. The evidence excavated from El Zotz

indicates that this trend was manifested in the distribution patterns of ceramic vessels and other portable objects. For instance, the presence of decorative elements of highly-skilled artisans, such as glyphs or realistic designs and court scenes, at various complexes (Table 7.29, Table 7.31) indicates there was unobstructed access to these goods; however, the differentiated accumulation of high-scoring ceramic objects (Table 7.24, Table 7.25) suggests the presence of socio-economic factors which influenced the differences among household assemblages. Therefore, the status and wealth of households cannot be assessed on the basis of the presence or absence of high-value (or high-scoring) ceramic objects such as polychromes. At El Zotz nearly all excavated areas, including the ones not included in this research, contained fragments of painted polychrome ceramics, though in variable quantities. The study of social hierarchy can only be achieved through a comparative analysis of frequencies (such as PSI scores, Table 7.1), or relative volumes of these objects at different locations (Table 7.20, Table 7.21, Table 7.22), and accompanied by evidence of non-ceramic artefacts (Table 6.2, Table 8.1 – Table 8.5) and architecture (Table 6.1).

Taking the above arguments into account, the polychromes of the Late Classic are unlikely to be indicators of social status per se. They can be considered high-value or luxury objects of the Late Classic period, but they would also be classed as alienable, rather than inalienable, possessions (Gregory 1982, 43). This implies that transactions leading to acquiring these objects were based more on economic circumstances of the transactors rather than social status. The Late Classic polychromes, at least the locally-produced ones, might signal the wealth of households through the purchasing power of high-value objects relative to other households. It is the large volumes of high-value goods found in certain locations that are likely to be directly related to the relative wealth and economic superiority of some population groups over others.

In the tribute network system, objects had a direction flow from lower social strata to higher. In the gift exchange network, objects most commonly had a directional flow from higher social tiers to lower or between groups of equal status. In either case, the objects which were distributed through the means of tribute or gift-giving functioned as facilitators for creating social and political bonds among various Maya groups. The Ik' style sherd fragments found at the El Zotz Acropolis are likely candidates to be classed as elite gifts (Figure A.8, Figure A.9). They bear signs of glyphic inscriptions and elaborate painted scenes with human figures, possibly court scenes, and are some of the rarest polychrome vessels excavated at the site. The foreign origin of these vessels, along with their scarcity, high cost, and breakage rates associated with transporting them over space, made these vessels candidates for prestige goods which were probably distributed through more exclusive, or more targeted, exchange networks (Hirth 1998, 459). If these sherds are indeed fragments of elite gifts brought into El Zotz, then they likely signify a social or political relationship between the royal families from El Zotz and from another Maya polity (Motul de San José being one possibility), and they were likely used as an elite status marker in the gift exchange process (Reents-Budet et al. 2000, 117).

This means that Ik' style vessels found at El Zotz could have been examples of inalienable objects. The only other potential candidate of an inalienable ceramic vessel found in a secondary or tertiary context rather than in primary contexts (tombs or caches) is a locally produced polychrome of Saxche-Palmar Orange Polychrome type bearing the El Zotz emblem glyph (Marroquín et al. 2011, 51; Figure A.15). When it comes to secondary and tertiary contexts from El Zotz, there are no further examples of ceramic objects which could be described as inalienable possessions (Weiner 1992);

thus, the distinction between alienable and inalienable is heavily reliant on the context of deposition and discovery.

The presence of non-local ceramic objects does not necessarily signify that an elite gift exchange took place. Many high-end ceramic vessels (the highly scoring decorated pots) would have been transported over some distance and traded at markets. Studies suggest that ceramic objects with higher aesthetic values and those used for socio-political or ideological/ritual purposes tend to be transported over larger distances than utilitarian objects (Tite 1999, 202). The utilitarian ceramic vessels are already produced in abundance by local craftsmen; if long-distance transport of these vessels is detected in archaeological contexts, these vessels were probably used as means to transport the contents of the vessels rather than the pots themselves. Some of the highly-decorated ceramic vessels, on the other hand, could have been traded for their aesthetic value alone. There are a few examples of non-locally produced highly decorated ceramic types at El Zotz dated to the Late Classic period, for example the Mataculebra or Santa Rosa polychromes decorated with the resist-reserve technique. These vessels, as well as the Ik' style decorated vessels, could have been part of elite gift exchange or they could have been traded at markets.

The Late Classic period was a time of elite opulence at El Zotz; it seems that objects with high display value were desirable and involved architecture, monuments and portable objects. This could have been a sign of growing prosperity across El Zotz populations as well as a sign of changing cultural conventions. It is evident that the visibility of wealth through material possessions increased from the Early into the Late Classic at El Zotz.

8.3. El Zotz in the regional context of the Early and Late Classic

The political landscape of the Early Classic period saw multiple new sites and powers emerge around the Petén region and in other Maya regions. Patterns seen at other sites, as mentioned in Chapter 3, indicate that the Early Classic settlements were often found in locations such as hilltops. The site of Bejucal is an example of a hilltop site investigated by the El Zotz archaeological project and was established at the end of the Preclassic period or the beginning of the Early Classic (Garrison et al. 2016). While the hilltop settlements at El Zotz – El Diablo and El Tejón – are not the earliest ones at the site (there was a small Preclassic settlement in the South Group of El Zotz), they mark the beginning of the monumental architecture at El Zotz. The nearby site of El Palmar was the seat of political power in the Buenavista Valley during the Preclassic period (Doyle and Piedrasanta, in press); El Zotz was a small settlement during that time.

El Diablo, set up at the beginning of the Early Classic period, was undoubtedly an important and sacred place at El Zotz. Its main temple (F8-1) was covered with divine iconography and marked the place of the burial of the founder of *Pa' Chan* dynasty ruling in the Buenavista Valley (Houston 2008a, 7; Román et al. in press; Houston et al. 2015a). The architectural features of the El Diablo complex, especially the elaborate masks of the Solar Temple (Chapter 6), and the artefact evidence found at the site, all suggest that El Zotz was a seat of power of divine kings in the region of Buenavista Valley with the beginnings of the *Pa' Chan* dynasty in the early phase of the Early Classic. The royal tomb of the dynasty founder located at El Diablo and dated to ca. AD 350 (Garrido López, Houston and Román 2011, 571; Román et al. 2011, Houston et al. 2015a) elevated the status of the El Diablo architectural complex consistent with the cultural practice of ancestor veneration. This then seems to be reflected in the fact that El Diablo returned the highest PSI score for the Early Classic Saquij I phase (Table 7.1).

The small size of the El Tejón complex, its much lower PSI score, and similarities of location to El Diablo suggest it was built to serve a supporting purpose to the El Diablo royal court. As such, the people using El Tejón were probably less likely to use and leave behind objects of the same value as the populations residing at El Diablo.

The Acropolis complex was a relatively small settlement during the Saquij I phase and while it had a lower PSI score than El Diablo, the small difference (statistically not significant) suggests a similar, relatively equal level of social status and wealth between the two architectural compounds. Groups of comparable status residing in one city likely engaged in power struggles in order to establish themselves as the recognised authority groups of the site. It is clear, however, that the royal seat of power and the royal household of El Diablo was located on a hilltop and distanced from the valley floor settlements, as well as other hilltop groups, such as El Tejón.

The settlement patterns of Saquij I phase continued into the later part of the Early Classic period, Saquij II. The Acropolis complex experienced growth in the valley floor and a tomb chamber with remains of highly decorated ceramics was found dated to Saquij II at Str. L7-8 (Newman and Menéndez 2012, 141-143). El Diablo and El Tejón complexes were also expanded during the Saquij II phase and new structures were built in each location. The increased PSI of the valley floor settlement could indicate the growing importance of the Acropolis household at El Zotz towards the end of the Early Classic period. The presence of Early Classic tomb chambers with evidence of high-status luxury objects at all three locations, including the valley floor, could mark a decreasing threat of warfare and political upheaval in the region.

El Zotz was in alliance with Tikal during this time period and Tikal was growing in political power in the region as well as spreading its authority. Tikal and its allies were

additionally affected by the *Entrada* event which marked political changes at Tikal and other sites with the arrival of warrior kings from Central Mexico; this likely also affected El Zotz. Perhaps, the increased prosperity noted at all El Zotz elite complexes during Saquij II phase was a direct or indirect result of *Siyah K'ak'* becoming the overlord of the *Pa' Chan* kings (Chapter 2; Houston 2008a, 8). The location of El Zotz in the Buenavista Valley which is a natural passage between the Gulf and the Sea (Beach et al. in press) made El Zotz a strategic ally for the other powers in the region. The establishment of new, Mexican, kings at Tikal – *Nun Yax Ayin* – probably prompted the new authority figures to ensure successful partnership with the kings of El Zotz who had the potential to control one of the major trade routes through the region. With the backing of the powerful centre of Tikal, *Pa' Chan* kings ascertained and grew their economic as well as political authority at El Zotz. Perhaps the regional events – *Entrada*, new foreign influences at Tikal and at El Zotz – prompted the possible increased elite status of the Acropolis complex and facilitated the transition of the seat of power from El Diablo to the more central location at the Acropolis.

During the newly-forged alliance with Calakmul (probably starting in the 6th century AD), the *Pa' Chan* royal family relocated their seat of power. The complexes of El Diablo and El Tejón (the latter being a smaller elite residential complex 400 metres northeast from El Diablo [Knodel and Garrison 2011, 390; Piedrasanta 2012, 189]) were abandoned by the end of the Early Classic period, as suggested by the excavated material evidence. The structures were, however, abandoned in a deliberate, and probably slow, process with the inhabitants moving all their possessions to a new location – which could be the Acropolis of El Zotz, located at the foot of the sacred hilltop and which would maintain the royal lineage continuity at the site (Román et al. in press).

The increasing presence of elite-related objects at the Acropolis relative to El Diablo throughout the Early Classic period suggests there could have also been an intra-site household competition among the El Zotz elites. Both of these complexes – Acropolis and El Diablo – were also places of greatest and most intense ritual activity not seen in other sectors of the site (Table 6.2), which emphasises the importance of these two locations at the site. If there were separate competing factions of elites at Early Classic El Zotz, the Acropolis household seems to have been gaining in power and control towards the end of the Early Classic period and established itself as the ruling house in the Late Classic period, perhaps through intermarriage. The looted tomb chamber discovered within the core of Str. L7-8 provided evidence of Saquij II highly decorated ceramics, possibly the remains of vessels which were unsuccessfully removed from the chamber. The presence of the tomb chamber at the Acropolis (Table 6.2) at the time when, as suggested by the evidence of ceramic refuse and high PSI score (Table 7.1), the complex was gaining in wealth implies that the Acropolis was also gaining in political importance. It might be the evidence for the presence of elite factional competition and conflict at El Zotz. The Acropolis likely became another sacred location, a place for royal burials, at El Zotz, besides El Diablo. This would have facilitated the transition of the seat of power from El Diablo to the Acropolis.

However, if the different locations bearing elite symbolism at the site, such as El Diablo and the Acropolis, were occupied and used by the same group, for instance the same extended family or even the same household encompassing multiple elite complexes rather than two competing families, then the change of location for the ruling house could have been influenced by other factors (although the presence of the high elite tomb chamber would have likewise acted as a facilitator for this transition). There could have been cultural transformations taking place at the site which affected the ruling

elites. They might have had to distance themselves from the buildings of the Early Classic royal house at El Diablo and establish their seat of power elsewhere. The change of location from the hilltop location to the Acropolis could have been a response to the political events of the region and the conflicts between competing powers of Tikal and Calakmul. It could have also been a simple sign of convenience. If the ruling elites had several locations already established at El Zotz, it seems reasonable to allocate the most central of them, the Acropolis, to serve the main administrative purpose once the threat of conflict and warfare subsided. It might have also been caused by the growing populations of El Diablo and El Tejón and the insufficient land and natural resources available to them at the hilltop complexes (Román et al. in press). Thus, the relocation of the royal seat of power to a more central locale, or simply the success of the Acropolis household, allowed for considerable expansion of the royal and elite palaces and residences, for easier exploitation of the local resources, easier extraction of taxes (tribute), and for more direct monitoring over trade and people moving in and out of the city.

During the alliance with Calakmul in the 7th and perhaps late 6th century, the rulers at El Zotz accomplished several construction projects focused on the central precinct of the site: the Acropolis and the Plaza of the Five Temples (Carter et al. in press). These constructions enlarged the main palace of the Acropolis as evidenced by the early Late Classic phase of Str. L7-1 covering its Early Classic phase (see Chapter 6: *Acropolis area construction events*). A radiocarbon date from this structure yielded a date of AD 532-650 (Laboratory number: Beta-288299, Table B.1) confirming a spur of construction activity during the Tikal hiatus period. These constructions altered and expanded the regal-ritual core of the city, aided by the support (probably economic as well as prestige) from the regional power of the Calakmul dynasty. The ceramic

assemblages dated to the Late Classic Mo' phase are small in quantities but very rich in highly decorated specimens. This is evidenced by the unusually high PSI score for the Acropolis complex and the fact it is composed in significant proportions of painted ceramics (Table 7.1, Table 7.20). These results might signal the beginnings of mass production and consumption of local luxury polychrome ceramics. It seems likely the *Pa' Chan* dynasty was dependent on powerful allies to legitimate their power as well as maintain elite lifestyles and monumental construction projects.

The Late Classic shift in regional power from Calakmul back to Tikal is illustrated at El Zotz through an initial halt in construction activities at the end of the 7th century, corresponding with the defeat of Calakmul. A somewhat sudden resurgence of monumental construction occurred in various sectors of the site around the middle of the 8th century. The construction works included massive investments in the Acropolis area, where the structures of the palace were raised to the monumental size seen today, and also the construction of Temple L7-11 next to the Acropolis, the construction of Las Palmitas and La Tortuga complexes, and various other projects (see Chapter 6).

All of the construction and depositional evidence from the Early to the end of the Late Classic period indicate that alliances with the powerful royal families of the Petén region were invaluable for the success of the El Zotz royal and elite households. Much of the elite wealth, richness of elite artefacts and the magnitude of elite architecture were probably a direct result of the overlord kings' patronage over the El Zotz dynasty. Interestingly, however, the alliance with one of the royal dynasties of the region did not immediately cause significant damage to El Zotz political or economic prosperity when this particular dynasty was defeated and subdued by a different one. It happened historically that the allies of the defeated Maya centres (for example, in the case of Uaxactun, an ally of Tikal which was defeated by Calakmul) suffered similar levels of

subjugation and stunted growth as the city they allied themselves with. In case of El Zotz, however, the alliance with both of the sworn enemies of the Petén – Tikal and Calakmul – during different times in the region’s history did not, in reality, affect El Zotz economic or political growth. This might be evidence that the alliances El Zotz exercised through time had more economic rather than political underpinnings and perhaps El Zotz did not fully support the other powers (Tikal or Calakmul) in war. In theory, the rulers of either of the victorious centres (rulers of Calakmul when they defeated Tikal, or rulers of Tikal when they defeated Calakmul) could have established a more punishing and overpowering relationship with El Zotz dynasty whereby the size of tribute payments to the victor could have potentially stunted the economic growth of the city. This would be evidenced in frozen constructions of elite precincts and poorer artefact assemblages (ie. assemblages containing smaller amounts of luxury and prestige objects). Instead, the El Zotz elite precincts flourished with every newly-forged alliance. This is an indication of the importance of El Zotz as a strategic centre in the Buenavista Valley, as well as a testament to the well-established and probably well-respected status of El Zotz kings. *Pa’ Chan* kings must have also been good negotiators at times of political change on the regional political arena.

The new architectural features of El Zotz’s epicentre mirror the greater trends of the Late Classic when access to the elite spaces was gradually but persistently becoming more and more limited. This trend is also visible at, for example, Uaxactun Groups A and B, the Great Plaza at Tikal, Tikal’s Acropolis and the Lost World (Valdés and Fahsen 2004, 159), and at Lamanai Ottawa Group (Czapiewska 2010; Graham 2004, 231-239). The newly constructed Temple L7-11 next to the Acropolis strongly reflects Tikal style in its architecture (Blankenship 2011), making a political statement of the time. A radiocarbon analysis of charred sample recovered from Str. L7-11 yielded a

date of AD 672-879 (Carter et al. in press; Table B.1). However, the ceramics recovered from below the basal platform of the structure included a few Ik'-style sherds believed to have been produced in the area of Motul de San José from the beginning of 8th century (Halperin and Foias 2010, 396; Reents-Budet et al. 2012, 82-83; Carter et al. in press). The same style vase fragments were also recovered from the core of Las Palmitas patio platform (Carter and Gutierrez 2012, 44). These sherds, thus, date both of these monumental construction projects, Str. L7-11 and Las Palmitas palace group (Strs. M3-6, M3-7) to post AD 725 (Carter et al. in press).

The excavation of the grand expansion of the central precinct at El Zotz produced large amounts of Caal ceramics, which comprise significant numbers of locally and non-locally produced high-value polychromes. Construction of Temple L7-11 was marked with a rich cache of polychrome vessels and precious objects (Table 6.2), a further testament of the status and wealth of the Acropolis population during the later part of the Late Classic period. Ceramic assemblages from the central precinct seem to contain higher proportions of the decorated type-varieties compared to the newly-established hilltop complex of Las Palmitas (Table 7.1, Table 7.20, Table 7.21, Table 7.22).

It is, therefore, likely that there might have been a competing relationship between the groups occupying the two large complexes, the Acropolis and Las Palmitas. The people in each complex could have used different supply networks of goods. The use of different supply networks by the Acropolis and by Las Palmitas might be the underlying reason for differences in material assemblages between the two complexes. Small amounts of the imported and locally-produced ceramics with glyph inscriptions and painted court scenes (Table 7.31; Figure A.8 – Figure A.17), especially the Ik'-style vessels, suggests that Acropolis probably did partake in different elite social networks to Las Palmitas. The similarities between assemblages from the two central complexes –

the Acropolis and Group K – on the other hand, suggest that the people in both of the central complexes used the same or similar supply networks to acquire ceramic goods. And while the evidence for the exact hierarchy among the Late Classic populations is not statistically proven, the comparative analyses of ceramic assemblages suggest that the central precinct at El Zotz, mostly the Acropolis, far outperformed other areas of the site in terms of the accumulation of high-value and luxury objects (Table 7.1, Table 7.20, Table 7.25).

8.4. Fundamental transformations of the Terminal Classic period at El Zotz

As described in Chapter 3, the Terminal Classic period marked significant transformations at Petén sites, from halted constructions, decreased quality of construction, and depopulation of large Late Classic centres, although some of the smaller Classic sites experienced florescence (Martin 2003, 34; Martin and Grube 2000, 53, 99; Sharer and Traxler 2006, 419-421; Houston and Inomata 2009, 302-304; Żrałka 2008, 202-210). In the face of the declining power of Tikal and other large cities in the Petén region, smaller players, such as the site of Nakum, experienced a relatively short period of prosperity and affluence. The archaeological evidence recovered from the site of El Zotz accords with the overall Petén picture of decline (for instance, reduced PSI scores, Table 7.1, or unfinished construction events, see Chapter 5). The evidence for Terminal Classic events at El Zotz is most visible in the Acropolis area, the royal compound of the *Pa' Chan* dynasty from the beginnings of the Late Classic period.

The special deposit found at the Acropolis structures is one of the richest deposits found at El Zotz in terms of the volume and variety of artefacts recovered. In terms of volume, the number of ceramic sherds found in the contexts of the Terminal Classic deposit

constitute as much as 30% of the total number of Terminal Classic assemblages analysed from all El Zotz complexes. The deposition patterns indicate that a number of the ceramic vessels were smashed directly into the deposit (Newman 2015, 263-274). The deposition events show evidence of ritual activities and it is plausible that the artefacts within the deposit are not regular refuse material. It is likely the events accompanying the formation of the deposit involved ritual and social involvement that is different to the circumstances of formation of refuse material found in middens.

Although the Terminal Classic Acropolis deposit bears similarities to termination rituals (for instance Sullivan et al. 2008, 109; Brown and Garber 2008, 158-159; Magnoni et al. 2008, 205-206), the patterns seen at El Zotz Acropolis suggest preparations for new construction (ritual activities were associated with filling of superstructure rooms), a process which was interrupted and never finished (Newman et al. in press, Newman 2015). Similar activity was documented at other sites, for example at La Milpa (Zaro and Houk 2012, 152), Aguateca (Inomata et al. 2004, 798, 808), Piedras Negras (Fitzsimmons 1999, 285). Contrary to the termination deposits, these preparations for new construction did not have the negative social connotations of desecration, destruction or cancelling of the ruling authorities, as was the case at El Perú-Waka Str. M13-1 (Navarro Farr et al. 2008, 142), Tikal (Suhler and Freidel 2003, 144) or Piedras Negras Acropolis (Child and Golden 2008, 84). Therefore, the behavioural processes involved in these two types of events – forming a termination deposit and forming a pre-construction deposit – are vastly different and are associated with vastly different intentions from the population performing the rituals (Canuto and Andrews 2008, 257-269). The new construction at El Zotz, although never completed, bears the evidence of continuation of the Late Classic trend of restricting access into the elite compound (Carter et al. in press; Newman et al. 2012). The group commissioning the event made

clear intentional references to the trends visible at El Zotz for at least 200 years beforehand. Radiocarbon dates obtained for two separately sampled excavation units returned dates of AD 774-978 and AD 776-990 (Laboratory numbers: Beta-265819 and Beta-265820, Table B.1) confirming the Terminal Classic chronology for this deposit. Strong elite presence is visible at the El Zotz Acropolis at the onset of the Terminal Classic period and likely lasted until about the second half of the 9th century.

A small architectural group, the Northwest Courtyard, located on the western side of the large Acropolis palace structures, was remodelled during the Terminal Classic period and a few minor additions were made to the large structures of the Acropolis proper. The new constructions at the Northwest Courtyard completely covered the earlier, Late Classic structures, but did not maintain the same quality of construction methods or the raw materials (Newman and Menéndez 2012, 169; Newman et al. 2012). The poor quality of masonry construction seen during the Terminal Classic period mirrors the construction evidence recorded at other contemporaneous sites in the Petén (Valdés and Fahsen 2004, 151). Perhaps the appearance of new groups wielding power, local or non-local, accounts for the changes in architectural traditions and commencement of new major construction projects at El Zotz.

The Terminal Classic renovation of Str. L7-17 included a cut piece of Stela 4 used as a northeast corner stone of the building. The glyphic text recorded the date of *bak'tun* ending 10.0.0.0.0 7 Ajaw 18 Sip (March 12, A.D. 830), (Newman et al. in press; Newman and Menéndez 2012, 156; Garrido López et al. 2012, 337). The text also bears the title and a name of the king, '[...] Chan Yopaat, described as k'uhul pa'chan ajaw, or holy Pa' Chan lord.' (Newman et al. in press). Thus, the institution of divine kingship persisted at El Zotz as late as AD 830. The incorporation of this monument into a platform of a building may suggest the inhabitants of the Northwest Courtyard lacked

understanding of its meaning, or they deliberately rejected its message (associated with the royal dynasty). As mentioned previously, the act of desecration of monuments and images associated with kings was a successful tool of political propaganda in the same manner as the erection of monumental art. The destruction of the El Zotz stela bearing an inscription of a king's name might signal political upheaval at El Zotz, fundamental transformations in the political structure at El Zotz and the end of the *Pa' Chan* dynasty. The events which prompted the destruction of El Zotz Stela 4 might have also contributed to the interruption of construction works at the Acropolis core structures following the deposition of the Terminal Classic ritual deposit. It is also possible that the inhabitants of the Northwest Courtyard group recycled the stela stone as building material, owing to shortage of resources. In any case, the occupants of this small group, the Northwest Courtyard, lived in the vicinity of the Acropolis for longer than the people of the Acropolis monumental structures who were probably members of the El Zotz royal dynasty and who erected the stela.

The fragment of Stela 4 places the renovations at the Northwest Courtyard in the second half of the 9th century (AD 850-900) which is contemporaneous with the creation of the large-scale deposit atop the Acropolis structures (Newman et al. in press). These deposits contained large numbers of a variety of artefacts including ceramic sherds, chert and obsidian artefacts, figurines, osteological fragments, shell, grinding stones and plant remains (Pérez Robles et al. 2009, 48; Marroquin et al. 2011, 13-14, 52-53; Newman et al. in press; Table 8.5). The preliminary ceramic analysis found that refits of vessels occurred between different excavation units and between sherds with different degrees of burning (Czapiewska-Halliday et al. in press; Newman 2015, 263-274). This suggests that vessels were smashed and scattered prior to burning episodes which were part of the entire event. Perhaps these artefact-rich deposits represent what is known in

the Maya area as scattering rites, a ceremony widely cited on Classic monuments and associated with commemorations of period endings (Stuart 1984, 9).

Table 8.5 Non-ceramic artefact assemblages recovered from Terminal Classic Cucul contexts at El Zotz.

Artefact Material	Acropolis	Las Palmitas	Group K	Total
Flint	1,927	266	60	2,253
Fauna	770	23		793
Shell	567			567
Obsidian	211	3		214
Figurine	89	3	3	95
Stucco	66			66
Stone	42	6		48
Snail	31	6		37
Human Remains	18			18
Ceramic	8		1	9
Vessel	1	3		4
Jade	4			4
Flora	1	3		4
Unidentified	2			2
Floor Stucco	2			2
Ceramic Necklace	1			1
Green Stone	1			1
Ceramic Sherd Count Reference	10,796	4,133	991	15,920

Changes in behaviour were additionally recorded at the Las Palmitas complex, where the deep refuse deposit found on the side of the group platform contained large amounts of complete and semi-complete ceramic sherds along with numerous other artefacts used for domestic food preparation and consumption (Carter and Gutiérrez 2011, 90-91). This might suggest possible feasting events taking place at Las Palmitas during the Terminal Classic period. These refuse deposits were dated to the Terminal Classic period and contain very little Late Classic material, suggesting that the deposition practices, and possibly also the social practices, changed between the two time periods,

along with other transformations visible at the site (Carter et al. in press). As outlined earlier in this work, sponsoring public and private feasts and ceremonies strengthened social bonds (Houston and Inomata 2009, 41) and reinforced the host's power to display socio-economic inequality through objects used during the feasting events, for instance ceramic vessels. The fact that the evidence of feasting becomes prominent at Las Palmitas during the Terminal Classic period possibly signals that the elite group residing at Las Palmitas exploited the political transformations occurring at the El Zotz Acropolis. The PSI results for the Acropolis and Las Palmitas are the complete opposite for Terminal Classic assemblages than they are for the Late Classic ones. Las Palmitas' PSI score for ceramics is higher for those dated to Terminal Classic phase, but lower for those dated to Late Classic, than that of Acropolis sample (Table 7.1). The population of the newly established Late Classic elite compound perhaps saw the chance to assert their power and authority and gain support among the local population. It is also possible that Las Palmitas became the new location for public and private feasting events of the El Zotz elites for the duration of construction works carried out at the Acropolis.

Apart from the widely used domestic artefacts, some high-quality imported items were also represented within the Las Palmitas refuse deposit. The large proportion of large game bones from white-tailed deer, brocket deer, peccary, and tapir indicates that the inhabitants had access to desirable foods (Newman et al, in press). Small amounts of Early Postclassic ceramics found on top of these deposits suggests that elites may have continued a steady occupation of the Las Palmitas palace complex throughout the Terminal Classic period, and probably significantly outlived the occupation of the Acropolis palace. Perhaps there existed competition between the two elite factions, the one from the Acropolis and from Las Palmitas. Under such a scenario, it is likely that

the events which caused the decline of one group – the Acropolis group – most likely helped the denizens of Las Palmitas survive the political upheaval of the time and perhaps even flourish.

The above evidence suggests that the last of the divine kings of the *Pa' Chan* dynasty, or people who associated themselves with the dynasty (perhaps through marriage), erected monuments and directed large-scale rituals well into the 9th century, but the political dissolution must have occurred relatively rapidly as their ambitious construction plans were never completed and the monuments were cut up and reused by people who continued to live at the site, but at a smaller-scale of occupation. The attempts of a revival of the position of the royal dynasty came at a time when Tikal's power and control over the region waned, along with some of Tikal's more powerful allies, such as Naranjo. This left a vacuum of power in which a number of petty states, such as El Zotz, Ixlu, Jimbal, Zacpeten and Nakum, temporarily revived their independence and dynastic authority in the region (Sharer and Traxler 2006, 421, 526; Martin and Grube 2000, 53; Žračka 2008, 197, 202-210). Thus, a political scenario similar to the one that existed at the end of the Preclassic period was created. The successes of these smaller polities were, however, relatively short-lived and in most cases the rulers of these centres did not maintain their power beyond the Terminal Classic period.

While the effects of the Terminal Classic transformations are most visible through architectural evidence, the recovered artefacts from El Zotz indicate significant social and cultural changes. The Production Step Indices for all El Zotz complexes in the Terminal Classic dropped in values from their Late Classic levels. The Las Palmitas complex had an already relatively low score for its ceramic assemblage dated to the Late Classic Caal phase and then decreased slightly in the Terminal Classic. The PSI

decrease for the central precinct complexes, the Acropolis and Group K, was significant for both of the two central complexes. The pattern of decreasing PSI is attributable to the decreasing volume of polychrome ceramics consumed during the Terminal Classic; after the mass production and consumption of the Caal phase, polychrome production seems to have slowed down and possibly eventually ceased.

The amount and variety of other artefact types and materials within Terminal Classic Cucul contexts is far greater than that recorded for preceding Late Classic phases (Table 8.5). This diversity of artefacts is however mostly found in the Acropolis Terminal Classic deposit (the unfinished construction phase) rather than at the site as a whole. The number of different types of materials recorded for Las Palmitas is 53% lower than that of the Acropolis; the quantity of different types of materials at Group K is 82% lower than at the Acropolis. And whilst the records listed in the excavation reports are not complete, the differences are so significant between the Acropolis and the other two complexes that the depositional behaviour is also likely to be a contributing factor to this discrepancy. Excavations at the Las Palmitas complex recovered a midden deposit rich in ceramic material. This rubbish pit was of smaller size than the Acropolis Terminal Classic special deposit in terms of volume of recovered ceramics. The ceramic assemblage recovered from Las Palmitas midden was also significantly less varied and indicates that the depositional behaviour associated with the formation of the refuse midden at Las Palmitas, and elsewhere, is different to the one associated with the formation of the special deposit at the Acropolis.

There were very few special deposits found in the Terminal Classic Cucul contexts at El Zotz. One burial was found at the Acropolis Str. L7-17 and one burial was found at Las Palmitas Str. M3-4 (Table 6.2). The burial contents were minimal. The Las Palmitas burial contained three vessels – a cylindrical vase, a small bowl and a tripod plate –

alongside a small amount of lithic artefacts. The three ceramic vessels appear in the same combination as the vessels found in a Late Classic Caal burial excavated from Str. L7-2 at the Acropolis (Table 6.2). There were no accompanying artefacts found in the Terminal Classic Acropolis burial. The Las Palmitas complex preserved the elite tradition found at the Acropolis during the preceding chronological phase, as reflected in the set of burial offerings. The PSI score, whilst very low at Las Palmitas, was the highest result out of all three complexes during the Terminal Classic Cucul phase (Table 7.1). The PSI results as well as ritual deposits further emphasise the differences between the populations from the two complexes – the Acropolis and Las Palmitas. There were very few ritual deposits found at Las Palmitas dated to the Late or to the Terminal Classic periods (Table 6.2). Thus, the population residing at Las Palmitas could have been expressing its cultural values in different ways, through different rituals which do not normally leave physical remains visible archaeologically. The Las Palmitas complex could have also housed a population of lower status which did not invest as heavily in ritual deposits, such as rich caches or burials, as did the Acropolis household. However, the special deposits of Las Palmitas show that some of the elite traditions of the Late Classic, such as the choice of burial accompaniments, were maintained and continued into the Terminal Classic through the practices of some of the elite groups at El Zotz, such as the one inhabiting Las Palmitas and one that is assumed to be of lower elite status.

Ceramic classification revealed that the Cucul phase at El Zotz was the most diverse in type-varieties out of all the chronological phases (49 different ceramic types). New ceramic types appear in the assemblages; at the same time, many of the Late Classic types continue to be produced and consumed at the site. The new ceramic types comprise both high-scoring and low-scoring types and have a varied number of

production steps involved. The highest step score for a ceramic type (eight steps) was found in assemblages dated to the Terminal Classic. However, the various surface enhancement techniques (painted decoration and non-colour decoration on monochrome vessels) which contributed to the high decorative step scores appear overall less frequently within the analysed Terminal Classic sample (3.56%) compared to the Late Classic Caal phase sample (11.53%, Table 7.22). They were most likely created by specialist potters for the consumption of wealthy households. The Terminal Classic period saw the biggest difference between low and high-scoring, or low and high-value, ceramic objects consumed by El Zotz elite households. It also illustrates that even though the PSI scores decrease across all complexes, some of the most labour-intensive ceramic objects were created during this time period.

Not much standardisation is visible within the ceramic assemblages, at least not of the same scale as is visible in the Late Classic polychromes. New production techniques of ceramic decorations, such as moulded-carved decorative techniques, become more popular during the Terminal Classic (Ting 2014). The use of moulds allows for mass production of ceramic vessels; however, the volume of moulded ceramic types is very low and does not suggest a mass consumption of these objects. There might not have been enough of a demand for larger amounts of these high-end objects. It is also very likely they were not produced locally and were traded or gifted into the El Zotz households.

The increasing number of new ceramic types showing new production and decoration techniques shows that the Terminal Classic was a period when the established conventions of the Late Classic were changed or broken. Thus, alongside crucial social and political changes of the time, cultural and stylistic transformations contributed to how craftsmen and artists experimented with the production of utilitarian as well as

luxury objects. There could have also been an influx of immigrant craftsmen coming into the region and bringing new methods, styles and motifs with them. There was probably a newly found freedom of taste after the dissolution of ‘old’ Early and Late Classic powers – Tikal, Calakmul, Naranjo – where the new emerging powers in the region and elite households were finding their own styles rather than emulating the tastes of the highest elites of the ‘old’ centres. These new tastes were driving the consumption and demand for new styles. Moreover, the presence of non-local products, such as the fine-paste ceramics, and the sheer number of different ceramic types show access to new distribution networks and distribution of new styles and ideas. INAA results performed on a number of fine-paste ceramic samples from the Altar Orange ceramic group from El Zotz indicated they were produced at or around Yaxchilan (Czapiewska-Halliday et al. in press).

The fine-paste pottery began to form part of the ceramic assemblages of the upper Usumacinta/Pasión drainage region at the very end of the Late Classic period and into the Terminal Classic (Forsyth 2005, 11-12; Foias and Bishop 1997, 283; López Varela 2005; del Pilar Jiménez Alvarez 2015). Examples of fine-paste vessels produced in the north-western zone show up in Terminal Classic contexts in small quantities throughout the Petén region and much of the southern and northern Maya Lowlands (Forsyth 2005). During the Preclassic and Classic periods, the Usumacinta region was the recipient of many of the Petén finely-decorated ceramic styles, and imports of Classic-period polychromes feature in elite contexts in the Usumacinta region. However, during the Terminal Classic, when the polychrome production in the central Maya Lowlands was dwindling, the fine-paste vessels produced in the north-western region were distributed over much of the Petén and the rest of the Maya Lowlands (Forsyth 2005). The imported fine-paste ceramic types do not appear in the Petén sites in quantities that

would suggest established large-scale trade and exchange but nevertheless they do consistently appear in Terminal Classic contexts across numerous central Maya Lowland sites. The styles of fine paste pottery from the Usumacinta region were also often emulated by local craftsmen (Forsyth 2005, 14-18). For instance, certain types produced in various areas of the Lowlands, such as Sahcaba Modelled-Carved or Portia Gouged-Incised, are thought to have been local ceramic products manufactured to resemble the style of fine orange type of Pabellon Modelled-Carved (López Varela and Foias 2005, 3). At El Zotz, all three of these ceramic types were found associated with Terminal Classic contexts at the Acropolis, Las Palmitas and Group K.

It is hypothesised that the introduction of the new styles of fine-paste vessels across the Petén sites during the Terminal Classic was an attempt to at least partially fill the gap left by the weakening system of polychrome production which dominated the previous Late Classic period (Ting et al. 2015). Therefore, although the fine-paste pottery is found in small quantities across the Petén area, it is suggested that these vessels took at least some of the functions that the polychromes played during the Late Classic period (Forsyth 2005, 18). In that sense, they likely became the new luxury and prestige objects of the Maya elites.

As seen at other sites in the Petén, the Terminal Classic assemblages at El Zotz show continuous use of imported objects and objects which might be labelled ‘luxury’ or ‘prestige’ – the fine-paste ceramic types. They attest that elite activity, perhaps more limited in its wealth display compared to the Late Classic period, was present at El Zotz after the dissolution of the Acropolis palace. The argument presented by Newman et al. (in press), suggests that the kin-based ranking of lower status elite groups outlived the ideology of the El Zotz royalty and the associated institution of divine kings. The Las Palmitas complex was affected by the Terminal Classic political transformations to a

lesser extent than the Acropolis or other central locations. Lesser elites were likely less affected by the political shifts than the royal households, as seen also for instance at Aguateca (Inomata 2003, 56-60) or Dos Pilas (Palka 2003, 121).

At this stage of archaeological investigations at El Zotz, there is no evidence for Postclassic elite presence at the site and the investment in labour is noticeably smaller as much of the raw materials are being reused and exhausted and architecture consists of small-scale perishable structures (Kingsley and Gamez in press). Two vessels of the Lacandon Maya, dated to the Colonial period (radiocarbon date of AD 1426-1524, Laboratory number: Beta-250882, Table B.1), were the latest objects deposited at the site. Thus, even long after the fall of the *Pa' Chan* dynasty in the Buenavista Valley and the complete abandonment of the site, the great ruins were not forgotten and drew Maya pilgrims onto its temple summits to perform rituals.

8.5. Ceramic vessels in the political and social conventions

The production and consumption of ceramic objects went through several transformations throughout the settlement period at El Zotz. Changes and continuities were visible in El Zotz ceramic assemblages. The ceramic analysis not only allows me to assess the relative intra-site relations and hierarchies among complexes at the site, but also helps pinpoint the possible variables, circumstances and driving forces which affected the changes, or lack thereof, within ceramic production and consumption networks at Maya cities. The variables discussed here are social and cultural conventions and the political shifts in power in the region. I assess to what extent social variables affect the ceramic assemblages and what we can deduce from ceramic collections about social and cultural norms, and political circumstances of the times.

Continuity in ceramic types and shapes is seen in many of the undecorated or less-decorated ceramics throughout the Classic period. Unslipped and Striated type-varieties are being produced with very similar modes of form, shape and surface treatment across the Early and Late Classic periods. The Late Classic unslipped types from the Cambio ceramic group continue to be produced well into the Terminal Classic period and possibly also into the Early Postclassic period. Vessel fragments from the Cambio group appear in mixed contexts with sherds diagnostic of the Late Classic, Terminal Classic as well as the Early Postclassic period. Evidence of the Late Classic ceramic unslipped and monochrome types are found in Terminal Classic contexts at the Acropolis and Las Palmitas and in contexts mixed with Postclassic material in the Las Palmitas rubbish pit. The monochrome types which scored low in production steps also present a great degree of continuity throughout the chronological phases. While there are minor differences between the red-slipped or orange-slipped types produced in Early, Late and Terminal Classic periods, it is evident that the monochrome types derive from the ones produced and consumed in preceding phases and carry some of their stylistic elements through time.

The majority of the ceramic types found at El Zotz and at other sites in the Petén region follow the same stylistic aesthetics during the whole of the Classic period. The regional styles of domestic, utilitarian as well as highly decorated types were found distributed at El Zotz, Bejucal, Uaxactun, Tikal, Calakmul (Demarest 2004, 81-82; Reents-Budet 1994; Culbert 1993; Smith and Gifford 1966; Walker 2009; Czapiewska 2012; Czapiewska-Halliday et al. in press) and other sites regardless of the political situation in the region. The regional ceramic styles were maintained and replicated at both the allied and competing sites. Craft production, unsurprisingly, seems to have been largely unaffected by the competition between royal and elite houses from different cities. What

is interesting, however, is that the consumption of not only domestic but also the highly decorative ceramics does not seem to be restricted by the political shifts in the region. An example of state interference in the flow of goods caused by competition and warfare is the Iron Curtain created in Europe after the Second World War and the complete curfew on importing goods from the western block into the eastern block. And while multiple wars are recorded in the history of Petén among numerous Maya sites, no site had the power, willingness or economic inclination to exercise a similar restraint on trade of commodities (Graham 2012). Elite households of various statuses shared tastes and drove the demand for the same styles and types of objects across the region. Political affiliations, competition and warfare do not seem to affect the social tastes or cultural norms and aesthetics which continue to be shared by elite households across different sites.

The political landscape does not seem to limit the consumption of certain ceramic types, but there is evidence of how politics can influence craft production and artistic output at Maya sites. During the Early Classic, while the majority of the ceramic types were pan-regional and widely distributed across Petén sites, there is evidence that the distinctive red-background polychrome type was produced at El Zotz, Zotz Red Polychrome, and was not frequently found outside the Buenavista Valley (Czapiewska et al. in press; Houston 2008a, 8; Newman et al. 2015, 131-145). The political landscape of the Early Classic Petén showed evidence of small sites and settlements set in defensible locations, such as the El Zotz complex of El Diablo built alongside an escarpment 150m above the central precinct of El Zotz, or Group A at Uaxactun built atop the highest hill of the site along the same escarpment as El Diablo (Román et al. in press). This phenomenon advocates for the presence of widespread inter-site competition, a less integrated political landscape compared to the Preclassic or Late Classic time periods, and possibly

warfare. A level of individualism in craft production, especially of highly-decorated elite objects, could be the result of this competitive situation among the Petén elite households. The unique highly-decorated ceramic type – the red-background El Zotz polychrome – appears in relatively small quantities and alongside larger quantities of the region-wide orange and cream polychrome types. The Zotz Red Polychrome vessels are most likely to be prestige objects of the Early Classic period as evidenced by their infrequent appearance in refuse material and their presence in the El Diablo royal tomb (Newman et al. 2015, 130-144). The production and consumption of unique ceramic objects indicative of a particular production centre (or workshop) seems to have operated on a small scale and, as far as El Zotz is concerned, only with regard to elite luxury and highly-decorated objects. The majority of ceramic objects cannot be associated with one specific workshop at a given site and were likely produced according to region-wide aesthetic conventions.

During the Late Classic period there is also evidence of consumption of highly-specialised elaborately decorated pottery that had localised sources of production. Vessels bearing texts and iconography which tie them to El Zotz were looted during the 1970s and are now located in private locations and museums throughout the world (Carter et al. in press). The red backgrounds of these polychromes link them stylistically and technologically to the Saquij polychromes found at El Diablo. Many of them depict deities or *wahy*, as well as dedicatory texts or geometric designs. No red polychrome vessels dated to the Late Classic Mo' phase were excavated from archaeologically controlled contexts; however, a fragment of one such vessel was recovered from looters' spoil at an underdetermined location at the El Zotz site. The painted polychrome design on this sherd depicts the Jaguar God of the Underworld and is consistent with the styles of the looted *wahy* vessels (Carter et al. in press). The fact that

many of these artefacts were looted as complete vessels suggests they were likely found in tomb chambers, possibly at El Zotz or at other sites, and were originally deposited as elite tomb offerings.

In a similar manner, Ik' pots from Motul de San José were produced in their own unique style. These polychromes on cream background often depict court scenes and/or glyphic inscriptions. A few examples of Ik' style vases were found in El Zotz Caal contexts at the Acropolis as well as at Las Palmitas. They represent a distinctive style of pottery associated with craftsmen from a specific location, and therefore carry a mark of authenticity which often adds value to objects, as discussed in Chapter 2 (Graeber 2001, 32; Appadurai 1986 44-57). Ik' style vases were found at many sites in the Petén region and are presumed to have been traded or gifted as social and/or political currency among Maya households. The red polychrome *wahy* vessels could have been similarly used as social currency. The political upheavals of the Late Classic Petén did not visibly affect craft consumption and distribution across the region; it did, however, create a demand for certain types and styles of objects – some produced locally, some produced at a distant place of origin – which were used for social and political reasons (as tribute and/or gifts underpinning social occasions and political transactions).

There is some evidence suggesting that trade and exchange of both objects and ideas followed to some extent the regional social and cultural affiliations among sites. Some of these trade routes and connections could also have been affected by political alliances. Two ceramic 'supercomplexes' were identified – an eastern supercomplex (Tikal, Uaxactun and sites of the Mirador Basin) and a western supercomplex (area around El Perú-Waka, south and west to the Usumacinta and Petexbatun regions) – in the Petén and neighbouring regions, which are distinguished by the presence of certain ceramic types during the Late Classic period (Forné 2006, 83-84; Forné 2008, 893; Rice

and Forsyth 2004, 32). Two ceramic types are especially characteristic of the two supercomplexes: Chinja Impressed (Figure A.65) and Chaquiste Impressed (Figure A.62, Figure A.63). Both of these types are from the Tinaja ceramic group and both are typically used for incurved-rim bowls or tecomates. Chinja Impressed type is characteristic of the eastern supercomplexes and Chaquiste Impressed of the western supercomplex.

El Zotz lies on the border of the eastern and western supercomplexes and both of the diagnostic types, Chinja and Chaquiste Impressed, appear in the Late Classic and Terminal Classic ceramic collections at the site. Both of the ceramic types are rare in El Zotz assemblages; however, they seem to reflect patterns which might suggest closer social or cultural ties with one of the supercomplexes over the other. The majority of the Late Classic Mo' and Caal phase Tinaja Impressed ceramics are of Chaquiste style (for example, Figure A.62, Figure A.63). This suggests a more intensive cultural interaction with the El Perú-Waka region. Two Late Classic Chaquiste Impressed sherds were subjected to neutron activation analysis which concluded that they had the same paste composition as the undecorated Tinaja Red sherds and polychrome fragments which are believed to have been produced locally (Ronald Bishop, personal communication 2012; Czapiewska-Halliday et al. in press). This suggests that it was the technique of production, not the finished vessels, that made its way to El Zotz from the El Perú-Waka region.

During the Terminal Classic Cucul phase, it is the Chinja Impressed type which dominates in the assemblage (for example, Figure A.65). This might suggest a shift in cultural or socio-political affiliations from Chaquiste-dominated Late Classic Caal phase to the Chinja-dominated Terminal Classic Cucul phase. The shift might correspond to demographic or cultural influences on the El Zotz commoner population

from sites of the eastern supercomplex during the late eighth and ninth centuries AD, in contrast to the influences of the western supercomplex on the El Zotz population during the Late Classic period (Czapiewska-Halliday et al. in press). The affiliations with either of the supercomplexes likely reflects cultural traditions among the producers rather than ideological or political identity (Czapiewska-Halliday et al. in press); however, social and political alliances likely facilitated the dissemination of practices, technologies and styles.

The region-wide and community-wide changes to social hierarchy and political authority that happened during the Terminal Classic also seemed to have had a profound impact on the production and consumption of goods. The newly discovered political system went hand in hand with newly-found freedom of experimentation and innovation in styles, techniques and aesthetic tastes. A new social order at many of the Petén sites likely prompted the demand for new styles which, deliberately or not, differed from the previously established Late Classic elite-associated objects. Thus, as was the case with all of the other patterns of ceramic consumption outlined above, social and cultural affiliations and transitions within communities have a far greater impact on craft production and consumption than the political landscape of the region.

8.6. Access to high-value goods among ancient Maya communities

As I stipulated earlier in this work, different population groups would have different access to goods based on the value of these goods. The Decorative PSI scores and Heterogeneity Measure analyses both suggest there was little or no differentiation in the distribution of high-value goods across the different El Zotz complexes of variable elite status (Chapter 7). Objects of higher value, showing high investment in their production and decoration, appear in every complex investigated regardless of the grandeur of architecture or the frequency with which objects of elite symbolism appear at these

locales. Examples from other sites, for instance from the greater Tikal area, also point to a wider circulation of painted, finely-decorated ceramics among groups of lower elite or even non-elite social status. High quantities of polychrome serving vessels were found in commoner as well as elite contexts throughout the greater Tikal area during the Late and Terminal Classic (West 2002, 151-162). There is no evidence at El Zotz for restricted access to high-value goods based on socio-economic status (linked to architecture size and elaboration). However, the means by which these objects were obtained could have varied, depending on the distribution networks used for the dissemination of objects across communities.

Market distribution, as advocated by Hirth (1998), and Feinman and Nicholas (2007), is the most likely mode of distribution of most of the ceramic material found at Maya sites. The results of Neutron Activation Analysis on a sample of orange polychromes, mentioned previously in this chapter, indicates that production of all local ceramics, decorated and undecorated, occurred from the same sources of raw materials and perhaps by the same range of producers. All these vessels could have been distributed along the same networks for both ceramic types – undecorated monochromes and painted polychromes. The mass production and consumption of locally-produced polychromes increased their accessibility across various segments of society, lower elites, the middle classes and perhaps even lower-status population groups, as they flooded the local craft market. The decorated polychrome vessels might have decreased in value relative to some of the rarer artefact types, such as shell or jade ornaments. Such a value decrease might be reflected in the sheer volume of polychromes found in El Zotz collections, especially during the Late Classic Caal phase (10% of the whole Caal phase sample, Table 7.20). It is even possible that as the demand from lesser elites, middle classes and non-elites for these objects increased through time towards the later

part of the Late Classic period, highly-decorated polychromes became as much of a commodity as the more modest and undecorated domestic wares. Decorated polychromes might have been just as much part of a market trade or community-wide exchange network as the domestic or utilitarian pottery.

Archaeological research into the ancient Maya economy has only recently led scholars to explore the previously neglected questions of physical locations of markets as well as the associated market exchange activities (King and Shaw 2015, 3; Blanton and Fargher 2010). As is the case with the definition of a court, the concept of a market can be defined in terms of a physical space – a *marketplace* – or it can be understood as a discrete set of human interactions, economic, social and political relationships, or activities of buying and selling – a *marketing behaviour* (Eppich and Freidel 2015; Shaw and King 2015; Hirth 2010; Garraty 2010; Blanton 2013; Hutson 2000; Shaw 2012; Wells 2006). Presence of a marketplace is not a necessary prerequisite for marketing activities; however, the archaeological evidence retrieved from excavated market locations provides crucial insight into some of these marketing behaviours and relationships within ancient Maya economy. For instance, at Maax Na and Tikal, evidence of specialised structures, monuments and spatial differences within the market spaces suggest there was a significant investment in construction projects in such locations (most prominent during the Late Classic period), a clear separation of the marketing space from the rest of the site, as well as presence of specialised areas within the market itself (Shaw and King 2015, Jones 2015). Moreover, the presence of shrines suggests that religious activities were also taking place at markets, and differential access to certain buildings indicates that some areas of the marketplaces might have been more restricted than others (Shaw and King 2015, Jones 2015).

The range of goods incorporated into the realm of market exchange within the ancient Maya economy is still poorly understood; suggestions and parallels are usually drawn from ethnographic and ethnohistoric evidence (King 2015; Wutzburg 2015). In general terms, markets offered an efficient way to distribute goods and services across populations where there existed an unequal distribution of goods and services compared to the populations' wants (Beals 1976, 39; Becker 2015, 107; Hirth 2010). Becker (2015, 90 – 107) further argues that markets provide an outlet for specialised goods and surpluses and, for this reason, marketing activities bring objects to consumers in a mode that is very different from the mode of gift exchange used for rare or unique items. On the other hand, Jones (2015, 88) theorises that the marketing activities at Tikal likely did encompass the sale and purchase of the more 'precious' objects such as highly-decorated polychrome pottery, jade, shell and obsidian blades, which were found in some of the Tikal's caches and burials; these types of objects are traditionally viewed to be part of the elite gift exchange network (Becker 2015, 90-91).

In the absence of easily identifiable marketplaces, large-scale studies of artefact distribution have been argued to be crucial for our understanding of the dynamics of exchange within and between polities (Becker 2015; Shaw and King 2015; Hirth 2013; Masson and Freidel 2013). The analyses of ceramic distribution at the site of El Perú-Waka' suggest that there existed multiple networks of object exchange, including commercialised, marketing activities (Eppich and Freidel 2015, 217). The degree to which market exchange was integrated into the complex network of Maya economic systems probably varied across polities and through time. During the Classic period, and especially during the Late Classic, it is thought that there existed a substantial commercial segment of the ancient Maya economy and that much of the Maya area was dominated by markets (Eppich and Freidel 2015, 200; Shaw and King 2015, 190-191).

The implication is that a great majority of objects, whether utilitarian in nature or related to elite activities, would have been obtained through market exchange and would have been largely commoditised and accessible to a wide range of consumers in the context of the marketplace.

The high-value ceramics are present at every analysed El Zotz location, at the larger as well as at the smaller elite architectural complexes (Table 7.22, Table 7.29, Table 7.31). However, they do not appear in the same volumes or the same frequencies relative to other types of ceramics at all of these locations (Table 7.24, Table 7.25). A similar pattern is seen for instance at the excavated sites of American plantations, where the plantation houses contained greater proportions of the more ‘costly’ British and European wares and the slave quarters contained greater proportions of the undecorated earthenware (Colono Ware) with small quantities of the higher value European glazed ceramics also present (Ferguson 1992, 9). Thus, while there is no evidence that lower segments of ancient Maya society experienced restricted access to highly decorated objects, there is clear disparity in how easily these objects were acquired. The small quantities of high-value objects at the smaller complexes during the Early and Late Classic periods signals that purchasing power could have been the most significant contributing factor to the composition of household assemblages; possibly more so than social rank or title alone. It is the wealth that proves to be more of a limiting factor when acquiring high-value or luxury goods than status, even though both social status and wealth often go hand-in-hand in the ancient Maya social hierarchy.

Political shifts in the region did not have profound, if any, effect on the distribution networks of goods across the trade routes among different sites. However, that is not to say that political authority did not affect the distribution of goods on an intra-site level across households. Central re-distribution of goods could have resulted in a similar

pattern of object distribution across the different architectural complexes. In such a case the largest quantities of high-value, luxury and non-local goods are concentrated at the royal court (the Acropolis of El Zotz) which redistributes goods to other lower elite and commoner households. And while the theory of free market trade seems a lot more plausible for the ancient Maya economy, it likely functioned alongside other modes of goods distribution, such as gift-giving or tribute networks – a form of re-distribution of objects (Graham 2012). Non-locally produced high-value goods, for example the Ik' style cream polychrome vases, are found in very small quantities at El Zotz and they appear to be the types of rare objects which were more likely to have been distributed through elite gift-giving rather than commodity trade.

The majority of the goods found across El Zotz assemblages show evidence of equal access for higher and lower elites, middle classes and even possibly for the commoner population. Economic wealth was the deciding factor in the volumes of accumulated goods, especially in case of most of the highly decorated objects found within the collections. Social status had little bearing onto what types of objects could have been acquired by households, the one exception being the objects within gift-giving circulation.

8.7. Elite control over distribution and consumption of goods

Recapitulating the arguments discussed throughout this research, the question of objects' accessibility is viewed alongside the means of controlling the access to these goods and whether such means were exercised by elite population groups within Maya communities.

While many objects of high decorative content are associated with the elites, there is little evidence to suggest they were limited to elite households only, or that their

distribution was controlled by the higher classes. At El Zotz, pottery of high step scores remains low in volume compared to the ‘utilitarian’ pottery, but still appears in all assemblages, even in assemblages of smaller elite households distant from the grand architecture associated with royalty. Even rare or labour-intensive decorative motifs (such as glyphs or scenes with human and mythical figures) appear in small elite, or middle class, household collections (Table 7.29, Table 7.31), thus disproving the hypothesis that smaller elite households would not have access to the same range of goods as the bigger, wealthier houses – high-status elite courts and royal courts – at least not based on their social status and size. The results of the analysis do not indicate that the larger households had greater access – meaning they were acquiring certain products based on social rank, political authority or title alone – to the high-value specimens (such as locally produced polychromes) than the smaller households. One hypothesis to explain such results is that a small-scale production and limited supply of certain high-end goods rather than elites restricting access or exercising active control over the distribution of these objects, caused these products to appear less frequently in lower status households or be absent from them.

During the Late Classic period, Group K, the small architectural compound in the central precinct, contained a ceramic assemblage which was more closely associated with the assemblage from the Acropolis than the assemblage from Las Palmitas. There is a stark difference in architectural remains between Group K and the Acropolis in that Group K lacked any kind of masonry monumental architecture, which was very prominent at the Late Classic Acropolis. This suggests that proximity to the same resources, trade routes, markets and distribution networks meant that population groups of varied statuses and occupying varied complexes had access to and consumed a very similar range of objects.

The Las Palmitas complex, even though it is of larger size than Group K, did not contain the same volume of high-scoring ceramics as the compounds within the central precinct – the Acropolis and Group K. It means that a location farther away from the distribution networks which supplied the central precincts likely affected the final composition of ceramic and other artefact assemblages. It might also be that the Las Palmitas complex was established as a competing household to the royal house of the Acropolis; people of Las Palmitas would therefore strive to establish their own distribution and consumption networks of luxury objects. It is possible that the social and political competition on an intra-site level, between elite factions within one site, affected the distribution of craft goods across the site to a greater extent than the inter-site or inter-regional political rivalry between different Maya cities.

The ceramic type-varieties which are relatively common within assemblages and appear in relatively large quantities – such as the unslipped types (Quintal Unslipped, Cambio Unslipped, Triunfo Striated, Encanto Striated), red and orange undecorated monochromes (Aguila Orange, Dos Hermanos Red, Tinaja Red, Azote Orange), polychromes with orange backgrounds (Dos Arroyos Orange Polychrome, Saxche-Palmar Orange Polychrome) – are also the ones which show greater differentiation in distribution among architectural complexes than some of the rare ceramic types (Table 7.24, Table 7.25). The largest complex, the Acropolis, contained not only a greater volume of ceramics as a whole during the Late Classic period, but also a greater concentration of these most common ceramic types compared to other complexes. The disproportion in the accumulation of domestic, utilitarian ceramic types at the Acropolis suggests there was more intense consumption of vessels probably used for large-scale storage, cooking and serving. The Acropolis assemblage then has different proportions of ceramic types compared to the smaller-scale household assemblages. High

concentration of utilitarian vessels in certain locations can have an equal potential – as high-value or luxury objects – to indicate differentiated functions of complexes, households, or structures.

Examples of the popular ceramic types which were not typically used for cooking or storing and which were found in abundance at the Acropolis complex are the orange polychromes. They are mostly locally produced ceramics and are decorated with a variety of designs, from lines and simple geometric designs to hieroglyphs and composite motifs. Thus, the elites from the Acropolis complex had the wealth to accumulate much larger quantities of certain objects than smaller population groups. The accumulation of goods might stem from household wealth and/or from the fact that large and diverse populations typically inhabited large elite and royal courts. Certain social conventions might have additionally dictated the presence of some objects in large quantities at courts, for instance, for hosting feasting events, for rituals, or for receiving dignitaries. The objects could have been part of received tribute or they could have been used for status affirmation. The different vessels could have also reflected the tastes and fashions of contemporary elites and the opulence of wealth display at elite courts combined with a range of domestic activities performed by a variety of social groups.

The significant quantities of ceramic objects bearing high decorative content signals that there was a large demand for high-end luxury objects. Without a demand for these goods, the production would have been much smaller in scale and the volumes of these ceramic types in circulation would have been much lower. The demand for these objects, such as the orange polychromes, stemmed from the elite tastes and was probably strengthened by other social groups emulating these elite tastes (for example, Miller 1982, 89-94). Thus, the high level of demand for highly decorated ceramics was

likely community-wide and drove the intensification of production and supply. Of course, changes in production modes and production technologies could have also facilitated the ways in which groups of varied social statuses adopted elite tastes. Both elements of the ancient Maya ceramic economy – intensification of demand and improvements in production technologies – contributed to the wide distribution of highly decorated pottery across whole communities.

The demand for highly-decorated elite objects affected the production as well as the distribution of objects. This, however, occurred through indirect influence – demand – rather than direct control over the distribution networks or producer output. There is no evidence suggesting that the elites controlled access to raw materials or trade in the raw materials used for the local production of polychrome and highly-decorated ceramics (as evidenced by results of Neutron Activation Analysis mentioned earlier in this chapter). One way in which elite households could have affected the production process of ceramic objects at El Zotz was through controlled dissemination of skills and knowledge needed for the production of some of the high-end objects (e.g. literacy and knowledge of glyph calligraphy, knowledge of court behaviour and activities during courtly events, knowledge of appropriate execution of certain shaping or decorative techniques).

We have little information on the mechanisms behind the dissemination of knowledge among ancient Maya craftsmen and artists. The most likely scenario is that the knowledge about the production of certain ceramic types was restricted to specific potters' households or workshops. This created pockets of ceramic production of certain rare types which are recognised as the authentic products originating in specific locations. This enables archaeologists to recognise the authentic products and the imitations, which are found in areas where members of other, local, workshops tried to

emulate styles of other specialist craftsmen. As mentioned in Chapter 2, it is speculated that the elites themselves were involved in the craft production (for example, Inomata 2001b, 325-330; Emery and Aoyama 2007, 86), and in this way might have limited access to the knowledge about pottery production. Thus, it is plausible that there was restricted access to the specialist knowledge on how to produce some of the local high-end objects, but evidence from my research suggests that no real control was exercised over the distribution, trade, exchange and consumption of these same objects.

The elites did not control but certainly influenced the craft economy of the ancient Maya. The high elites, or the royalty, at El Zotz did not seem to have had the power or inclination to actively prevent lower status elite populations or households from obtaining specific objects. The results of PSI and Heterogeneity Measure analyses of the Acropolis ceramic assemblages indicates the emphasis was placed on accumulation of the highly decorated objects in much larger volumes than is seen at the elite households of lower status, such as Group K (Table 7.1, Table 7.22, Table 7.25). The control over specialist production knowledge probably lay in the hands of the specialists' households and workshops and it is unclear how the specialist pottery craft and artisan knowledge could have been restricted by the elites at El Zotz. The dissemination of and access to craft knowledge is perhaps best explained by being rooted in kin-based ties rather than social or political affiliation.

Evidence from my research, especially the results of PSI analysis and the spatial distribution of different ceramic types as well as decorative modes (Table 7.1, Table 7.20, Table 7.24, Table 7.25, Table 7.26, Table 7.29, Table 7.31), strongly suggests that there was community-wide access to an extensive market exchange network of all kinds of ceramic products at El Zotz. Nevertheless, there is enough evidence from texts, images and from other sites to suggest that a gift exchange network was also well-

developed among the Maya, and especially among the Maya elites. Gifts, as discussed previously, are inherently different from commodities in that they have the potential to create a social bond between the two parties involved in the exchange. Similarly, tribute is a material representation of economic bonds or social contracts. If the analysed assemblages contain objects of gift exchange alongside commodities traded through market mechanism (and by probability, they most likely do), then the smaller elite households at El Zotz (such as El Tejón and Group K) might have had the potential to take part in the same gift-exchange networks alongside the higher-status elite populations (such as the ones inhabiting El Diablo or the Acropolis). Participation in a comparable range of exchange networks of ceramic goods (market exchange and gift exchange) perhaps best explains strong similarities between assemblages from different-sized El Zotz complexes as seen in the results of my analysis (such as similarities between PSI results, Table 7.1). The differences between ceramic assemblages from various complexes probably signal that larger elite households of higher status participated in a wider range of exchange networks, perhaps exchange networks with royal families from other polities and the like. Nevertheless, the results of my research (distribution of high-skilled specialist designs, Table 7.29; distribution of high-scoring painted ceramics, Table 7.22, Table 7.3, Table 7.6, Table 7.11, Table 7.16; fluctuations of PSI results across all architectural complexes, Table 7.1) suggest that the range of distribution networks accessed by the high elites and the low elites, or the sources and mechanisms through which these different households obtained their ceramic products, overlapped to a significant degree.

It is extremely difficult to identify objects which went through different networks of distribution as all ceramic types ended up in the same depositional contexts. We can speculate that certain ceramic vessels, such as the ones bearing emblem glyphs or the

Ik' style vases, were part of a gift exchange network rather than market trade; however, there is no firm evidence to support this hypothesis within the El Zotz ceramic assemblages. Vessels found as cache deposits and as burial offerings are consistent with the ceramic types and varieties found in secondary deposition contexts and confirm that the same kinds of objects were utilised by households as well as deposited during rituals. Most of the vessels found as burial accompaniments were used, probably by the members of the deceased individual's household, prior to being deposited with the body. Numerous complete vessels found in primary ritual contexts at El Zotz exhibit signs of wear consistent with regular vessel use (Newman et al. 2015). Maquet (1971, cited in Appadurai 1986) classifies such objects into the category of 'ex-commodities' which means these objects could have been both alienable (commodities) and inalienable (burial accompaniments) possessions during their lifetime.

The research carried out suggests that status differentiation may have been emphasised by immaterial goods, such as titles, land rights and tribute rights, and by monumental architecture more than by portable objects. There might have been a small range of portable objects which were restricted to elite classes, such as elaborate jade or shell ornaments. The most elaborate ceramic vessels probably formed a very small part of this group of elite portable objects, if they were indeed restricted to the elites at all. It becomes increasingly less clear whether objects previously claimed to be of typical elite consumption were actually restricted to the use of elite classes only. The widespread distribution of the elaborately decorated or inscribed vessels (as seen in my data, Table 7.3, Table 7.6, Table 7.11, Table 7.16, Table 7.29) confirms they were relatively widely accessible within a Maya community and suggests also that market trade and exchange networks were well developed and were an important part of ancient Maya economy during the Classic period.

CHAPTER 9. Concluding Remarks

Elite architecture and portable objects formed a formidable part of thriving ancient Maya polities such as El Zotz. Much of the Maya architecture, the remains of which are still visible today, pertain to the elite class. This relationship between monumental architecture and social rank has been confirmed based on the presence of portable objects with elite imagery, presence of monuments with inscriptions of elite and royal names, as well as the presence of rich burials and caches filled with precious artefacts and materials. It is, thus, not a surprise to see that so much archaeological research focused on Maya elites, giving the perception that elites formed a large part of ancient societies.

Elites likely formed a very small proportion of the overall population within any Maya polity. However, the monumental architecture, and often very well-preserved assemblages of rich material culture associated with the highest status groups, formed a large and visible part of the core landscape of every ancient Maya city. The majority of the areas inhabited by lower social strata, the commoners, are less likely to be preserved to a level which would enable as detailed archaeological research as the elite quarters do. Much of the peripheries of the cities, especially in the Petén region, are now covered by thick vegetation. However, even when much of the commoner settlement areas are not accessible or not preserved, it is only logical to assume that a polity with a well-developed and prominent civic-ceremonial centre housed a substantial and diverse population which supported the lifestyles of high-status groups. And they supported these authority groups with tribute, or taxes – regular, routinized collections (Smith 2014).

Even though the royal and elite population groups often constituted a relatively small proportion of the overall population of any ancient (or modern) state, they are a group with the greatest potential to influence and materially impact the histories of the cities they inhabit through their economic or political decisions. The authority groups have the power to set the political positioning of their city within the regions, they frequently dictate economic relationships with other polities, and they also often influence the social norms emulated by the wider public. Thus, the relationships among elite lineages are vital determinants of the historical trajectories of ancient Maya states.

The centre of El Zotz is characterised by a well-developed city core with multiple complexes of monumental masonry architecture, monumental art and large open spaces for public gatherings. The overview of masonry architecture at El Zotz and the fragmentary glyphic records suggest there was a well-established royal dynasty which governed a substantial population within the city. The well-developed civic-ceremonial centre is combined at El Zotz with several monumental complexes scattered around nearby hilltops (El Diablo, El Tejón and Las Palmitas, Figure 1.1). The construction and evolution of these different monumental sectors suggests that El Zotz was inhabited by a dynamic and diverse group of several high-ranking households or lineages. The interaction and competition among these elite kin groups was probably one of the contributing factors to El Zotz's success in the Buenavista Valley during the Classic period.

My research provides good evidence that there existed some level of factional competition (Elson and Covey 2006, 9; Brumfiel 1994, 4; Smith 2003, 185) among the elite groups and that the local political landscape within El Zotz changed significantly throughout the Classic period. The differences in social rank between elite groups, represented by separate architectural complexes, were most prominent between Las

Palmitas and the Acropolis during the Late Classic Caal and Terminal Classic Cucul phases. To some extent, evidence for potential competition between elite lineages can also be seen during the growth of the Acropolis complex during the Early Classic period, which could have been established as a competing power to the El Diablo household.

Despite the incidence of multiple elite households at El Zotz, the polity enjoyed a long period of stability and prosperity of a single royal dynasty. This is confirmed by the appearance of the same emblem glyph throughout centuries of occupation of El Zotz and which was found across different zones at the site. The royal lineage of El Zotz, the kings and queens of *Pa' Chan*, remained in power from the beginnings of the Early Classic settlement at El Diablo, to the decline of monumental architecture during the Terminal Classic period. The political and economic positioning of all the different elite groups in relation to the powerful royal household must have created a stable yet complex network of political relationships. El Zotz prospered as a city with strong political underpinnings within a dynamic region during turbulent times.

9.1. Study of value and its challenges

Identifying ceramic goods of different value proved to be extremely difficult. The distribution of ceramics across large and small architectural complexes did not yield any valid statistical variations which would have firmly confirmed the types of objects to be classed as alienable or inalienable. Locally produced highly decorated objects showed widespread distribution at El Zotz, suggesting that they could have been exchanged as commodities. The objects which were proposed to be the inalienable possessions, and which could have formed part of the gift exchange network, the precious products, were found in very small numbers and the statistical analysis of their distribution around the site is not conclusive. Thus, two types of ceramic goods are represented within the El

Zotz ceramic sample – the very common objects, frequently found at all locations and accessible to all analysed elite groups, and the very rare objects which are represented by a handful of artefacts.

There are only a handful of candidates for ceramic objects that could have been limited only to the highest elites and not available to the wider population. These include objects with glyph inscriptions, especially with emblem glyphs and individuals' names. Ceramics with glyph inscriptions are rare outside the Acropolis and the other palaces but they do occasionally make their way into the contexts of more modest-sized household groups. Other ceramic types, especially the locally-produced orange polychromes, had extremely widespread distribution and many of them were similar in artistic content and aesthetic quality to the objects bearing emblem glyphs. Furthermore, the same types and styles of objects found in refuse contexts were also found in royal and elite tombs and were used for ritual offerings. Thus, there seems to have been little or no distinction between ceramics deposited in special contexts and ceramics discarded as household rubbish, meaning these objects might not have been considered precious enough to be protected from damage and breakage during private or public use. Where objects were not treated or disposed of with any particular care, they are often considered to have been common household objects (Lesure 2012, 373). This pattern of object distribution suggests a well-developed market economy centred around commodity trade and driven by demand of the consumers rather than by direct control of the authority groups over access to resources and products.

A two-tiered classification of ceramic material – the commonly found, abundant ceramic types and the rare ceramic types – did not fit the intra-site elite hierarchy. The Production Step Index method of analysis allowed me to perform a more granular object classification and identify intermediate classes of objects based on the amount of work

dedicated to their production. The resultant categories of ceramics reflected a range, from a score of 0 steps to 8 steps, rather than resulting in two categories (common / rare, high-elite / lower-elite, alienable / inalienable). Employing the Production Step Index method allowed me to assess the overall relative values of assemblages from the El Zotz complexes.

Nevertheless, the Production Step Index method does have its limitations, the most important of which is the fact it focuses on *production* only. While there is good argument and evidence to suggest a strong correlation between values of objects and the time dedicated to their production, other variables which affect an object's value are missed when this analysis method is employed on its own. Other factors which might have affected the value of ceramic goods included, for instance, the purpose of the object (why it was produced); the distance the object was transported; the cultural or social significance of the object's style; the importance of the vessel contents; the context in which the object was traded, exchanged, gifted or deposited; the message conveyed by the object's decoration; and the status and authority of the people involved in the object's production, distribution and deposition, to name but a few. As advocated by Kopytoff (1986), all relevant activities which contribute to the biographies of things will affect the object's value. Because of the constraints and nature of the archaeological material, we only get a glimpse into these biographies and can only attempt to retrieve a small part of these objects' values. While there is very little that can be done to improve this limitation (there is very little additional information which can be retrieved from archaeological artefacts such as ceramic remains), it is important to remember the limits imposed by the methods employed.

Even though the methods of analysis I employed in my research might not paint the complete picture of ceramic consumption at El Zotz, the results do show emerging

patterns and provide a glimpse into the vibrant network of ancient Maya trade and exchange. The statistical tests often showed little to no difference in the values and composition of assemblages from different sectors of the site. The distribution of ceramics, as discussed in previous chapters, showed little evidence of restriction or control over the production and circulation of high-value objects. It might of course be the case that all of the sectors selected for my research were inhabited by social groups of very similar status and would therefore produce similar compositions of artefacts within their excavated assemblages.

Despite the fact that not all aspects of social, economic and political differentiation were captured during the course of my research, several key features of ancient Maya elite economy were illustrated through the analysed data, such as: commodification of high-value objects through time shown by increased presence of polychromes in large and small household assemblages during the Late Classic (Table 7.20), absent or very limited social control (as opposed to economic control) over high-value and luxury object distribution, a dual distribution system of commodities and gifts, and a likely competition of elite households within El Zotz during all of the Classic time periods. The approach which combined analysis of architectural features, classification of ceramics into types and varieties, analysis of ceramic decoration, inventories of other artefacts and special deposits allowed for a comprehensive overview of how these different elements of material culture were integrated within the elite environment and how they transformed through time. All these elements together have the potential to shed light on the social behaviour, wealth differences and political affiliations of population groups, even groups which on the surface might appear similar to one another. A combined approach to artefact and architecture analysis enabled me to

recognise that there existed factional competition at El Zotz alongside a presence of a strong and long-lasting royal lineage.

9.2. Future Research

Future research should incorporate the analysis of other attributes of ceramics, focusing on the technological aspects of ceramic manufacture. While the surface appearance, gleaned from the type-variety classification and modal analysis of decorative attributes, does not seem to affect the distribution of objects across the different complexes at El Zotz in my study, perhaps the fact the objects originated in different workshops, or were produced using particular techniques and materials, did. Detecting non-locally produced objects should form an important part of research to enable effective tracking of social and political interactions between different sites (for example, Howie 2012).

A future research focus should also be directed towards archaeological investigations of the commoner households at El Zotz. The commoner settlements are usually located farther away from the civic-ceremonial cores of polities, are much simpler in their architecture, and contain minimal to none of the masonry features which are commonly found within elite buildings. Often, the commoner house architecture can only be assessed based on archaeological evidence of perishable structures. As discussed earlier in this chapter, the stratigraphic contexts of commoner settlements are less likely to preserve artefacts to the same level as elite structures because the protective layers of stone or stucco collapse are lacking (Graham 1985).

Small-sized residential mounds are scattered around the central core of El Zotz, often arranged in informal clusters or rectilinear arrangements of two or four mounds called patio groups (de Carteret 2017, 155). These mounds, remains of masonry platforms which once supported perishable structures, are relatively small in size compared to the

masonry architecture of the central precinct; they are simple in form and are not associated with monumental architecture (de Carteret 2017, 154-155). Extensive mapping of these residential mounds was undertaken during multiple seasons of archaeological investigations at El Zotz and a total of 79 mounds have been located within a 1km radius of the central precinct (Knodell and Garrison 2011; Garrison and Kwoka 2012; de Carteret 2017, 155-156).

One of the residential patio groups, Group I10, was a focus of extensive horizontal and vertical excavations undertaken by Alyce de Carteret, who investigated the architecture of this small residential group and the transformations the architecture underwent over time (de Carteret 2017). It is the only research at El Zotz to date which targeted a lower status household, a commoner group. De Carteret's research focused on housebuilding and the architectural features of the platforms; excavated ceramic material was used primarily to set the stratigraphic contexts of buildings and the construction phases within El Zotz chronology. It was determined that Group I10 was occupied during the Terminal Classic period. The initial constructions in the complex could have occurred at the tail-end of the Late Classic Caal phase, towards the transition between the Late and Terminal Classic periods (ca. 850 AD, de Carteret 2017, 161).

The ceramic material recovered from Group I10 was classified according to the type-variety system and the preliminary results indicate that small amounts of sherds of polychrome types, and items of high decorative values (for example, Ik' style vases) were deposited at this location (de Carteret 2017, 163). The ceramic material recovered from multiple other small mound groups as part of the residential test-pitting program at El Zotz (de Carteret 2014) further suggests that the Terminal Classic imported fine wares (such as Altar Orange or Chablekal Gray), or Saxche-Palmar and Zacatal polychromes were not clustered in certain areas over others and appear in small

quantities in all sectors of the site (de Carteret 2017, 348). Production Step Index analysis should be performed on the ceramic material recovered from residential groups and statistical analyses should be performed to assess the distribution patterns of different ceramic types across a variety of architectural groups. Future work will aim to assess the hypothesis whether inhabitants from small commoner households had access to the same trade and exchange networks of material goods (exemplified through highly decorated pottery) as the denizens of the grand elite complexes. In my research, I postulate that the lower elite households at El Zotz had access to the same distribution networks and the same, or very similar, range of products as the royal household and that many of the transactions probably occurred through market trade. By incorporating ceramic assemblages excavated from peripheral, commoner households, the future investigations of El Zotz ceramics will aim to extend the arguments presented in this research and assess the nature and extent of community-wide access to the same range of goods.

It is difficult to assess how much the wealth and political authority that the elites exercised within El Zotz affected the general population and the prosperity of the city as a whole. The success of elites and their power to exercise authority over others probably stemmed from marriage ties, maintaining tribute networks and being able to maintain their social position among other royal and elite families in the region. Wealth and political power were likely manifested through material objects to a certain extent, but the analysed data suggest that the material representations of elite status might have been less important, or perhaps served different social purposes, than the non-material aspects of authority (such as titles, land rights, tribute rights). Perhaps elite households of different titles (the royals, the higher elites and the lesser elites) had different attitudes towards the tangible and intangible representations of elite status. Maya elites

were setting and following trends and styles of their times, much like the consumers of our times, but they certainly manifested their positions in society through a myriad of other means besides material possessions.

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APPENDIX A. Selected Vessel Fragments from El Zotz and Bejucal Ceramic Sample



El Diablo: EZ-5B-26-1
Early Classic: Saquij II
Caldero Buff Polychrome
Decor. No. 41



El Diablo: EZ-5M-4-2
Early Classic: Saquij I
Yaloche Cream Polychrome
Decor. No. 60

1 cm

Figure A.1 Early Classic non-orange polychromes with geometric motifs visible from El Diablo complex.



Acropolis: EZ-2J-3-1
Early Classic: Saquij II
Yaloche Cream Polychrome
Decor. No. 3



El Tejón: EZ-17A-2-X
Early Classic: Saquij II
Caldero Buff Polychrome
Decor. No. 61

1 cm

Figure A.2 Early Classic non-orange polychromes with complex motifs (possible glyphs) from the Acropolis and El Tejón complexes.

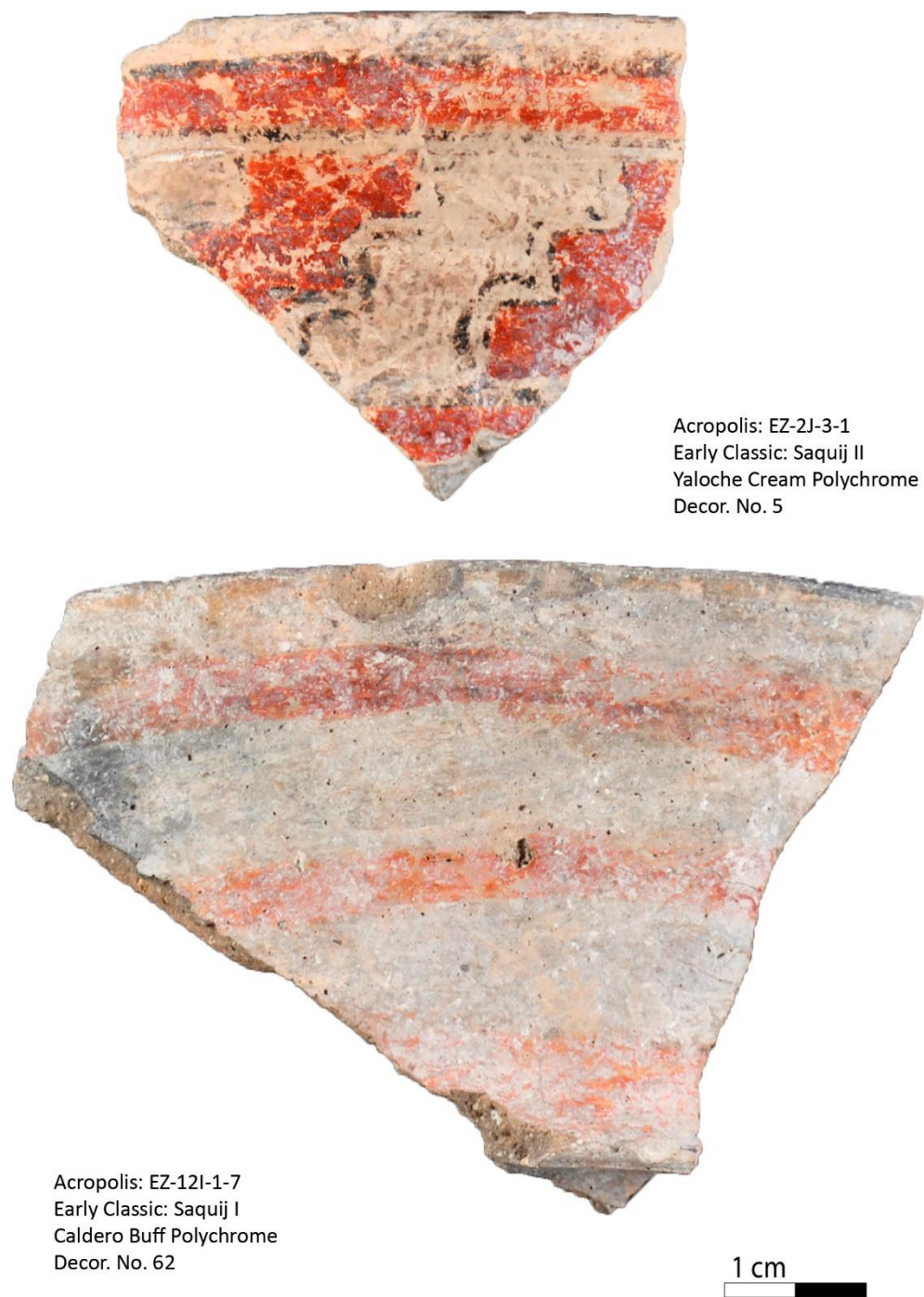


Figure A.3 Early Classic non-orange polychromes with geometric motifs from the Acropolis complex.



Acropolis: EZ-2F-2-12
Early Classic: Saquij II
Yaloche ND: Black on Cream Bichrome
Decor. No. 39

1 cm

Figure A.4 Early Classic cream polychrome with geometric motifs from the Acropolis complex.



Acropolis: EZ-2G-24-1
Late Classic: Mo'
Saxche-Palmar Orange Polychrome
Decor. No. 172

1 cm

Figure A.5 Late Classic orange polychrome with pseudoglyphs from the Acropolis complex.



Acropolis: EZ-2H-7-2
Terminal Classic: Cucul
Saxche-Palmar Orange Polychrome
Decor. No. 219



Acropolis: EZ-2H-5-7
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 237



Acropolis: EZ-3A-1-5
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 44

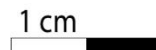


Figure A.6 Late and Terminal Classic orange polychromes with pseudoglyphs from the Acropolis complex.



Acropolis: EZ-2H-5-8
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 218

1 cm

Figure A.7 Late Classic orange polychrome with pseudoglyphs from the Acropolis complex.



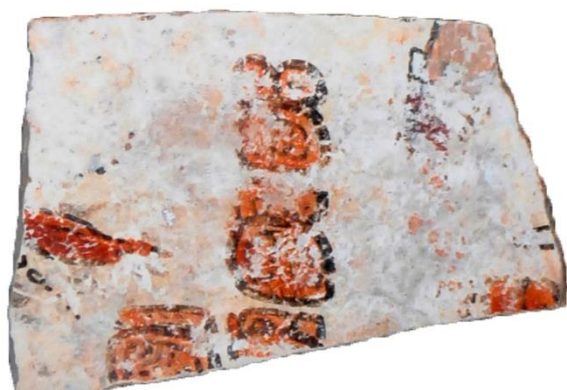
Las Palmitas: EZ-4X-14-1
Late Classic: Caal
Zacatal Cream Polychrome (Ik'-style)
Decor. No. 266



Las Palmitas: EZ-4X-14-1
Late Classic: Caal
Zacatal Cream Polychrome (Ik'-style)
Decor. No. 267

1 cm

Figure A.8 Late Classic Ik'-style polychromes with human figures and glyphs from Las Palmitas complex.



Acropolis: 2A-7-3
Late Classic: Mo'/Caal
Zacatal Cream Polychrome (Ik' style)
Decor. No. 94



Acropolis: 2F-2-8
Late Classic: Mo'/Caal
Zacatal Cream Polychrome (Ik' style)
Decor. No. 95

1 cm

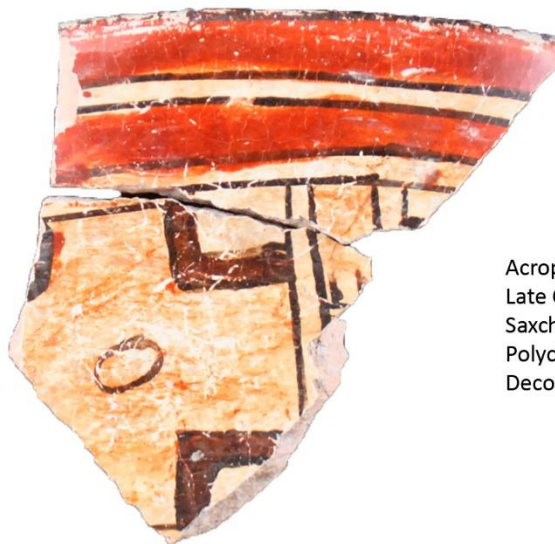
Figure A.9 Late Classic Ik'-style polychromes with human figures and glyphs from the Acropolis complex.



Acropolis: EZ-3A-1-5
Late Classic: Caal
Zacatal Cream Polychrome
Decor. No. 46



Acropolis: EZ-2G-27-3
Late Classic: Mo'
Zacatal Cream Polychrome
Decor. No. 260



Acropolis: 2J-3-3
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 220

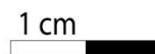


Figure A.10 Late Classic potentially non-local cream polychromes (including glyphs) from the Acropolis complex.



Acropolis: EZ-2G-26-1
Late Classic: Mo'
Paixban Buff Polychrome
Decor. No. 259



Acropolis: EZ-2H-5-9
Late Classic: Mo'
Zacatal Cream Polychrome



Acropolis: EZ-2H-5-8
Late Classic: Caal
ND Black Polychrome
Decor. No. 252

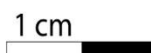


Figure A.11 Late Classic non-orange polychromes with complex scenes and human figures from the Acropolis complex.



Figure A.12 Late Classic orange polychromes with complex scenes from the Acropolis complex.



Acropolis: EZ-2H-5-8
Late Classic: Caal
Zacatal Cream Polychrome
Decor. No. 251

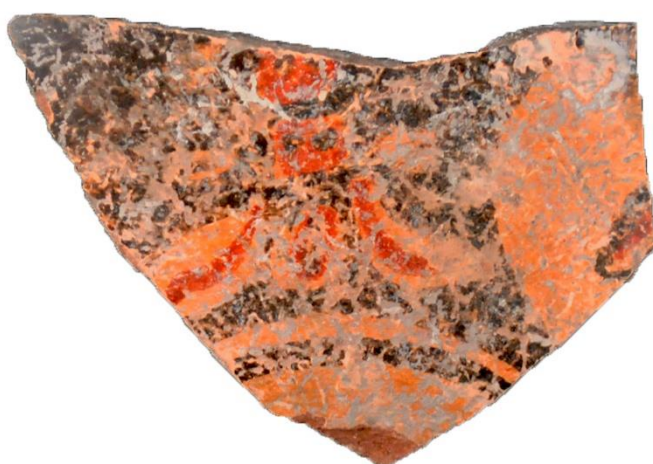
Acropolis: EZ-2H-5-8
Late Classic: Caal
Chinos Black on Cream Bichrome
Decor. No. 34



Acropolis: EZ-3X-2-2
Late Classic: Caal
Zacatal Cream Polychrome
Decor. No. 19

1 cm

Figure A.13 Late Classic cream polychromes with complex scenes from the Acropolis complex.



Acropolis: EZ-12J-13-2
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 70



Acropolis: EZ-2G-28-2
Late Classic: Mo'
Saxche-Palmar Orange Polychrome
Decor. No. 134

1 cm

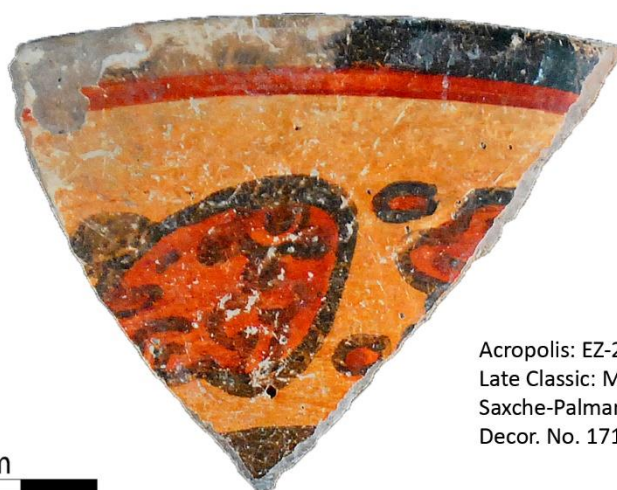
Figure A.14 Late Classic orange polychromes with complex scenes from the Acropolis complex.



Acropolis: EZ-2G-14-4
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 256



Acropolis: EZ-2G-17-1
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 255



Acropolis: EZ-2G-29-2
Late Classic: Mo'
Saxche-Palmar Orange Polychrome
Decor. No. 171

1 cm

Figure A.15 Late Classic orange polychromes with glyphs (including El Zotz emblem glyph on vessel fragment No. 256) from the Acropolis complex.



Acropolis: EZ-3X-2-2
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 18



Acropolis: EZ-3X-2-2
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 17



Acropolis: EZ-3X-2-2
Late Classic: Caal
Zacatal Cream Polychrome
Decor. No. 28



Acropolis: EZ-3A-3-2
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 26



Acropolis: EZ-2G-15-1
Late Classic: Caal
Orange Polychrome: ND Red on Orange
Bichrome Incised
Decor. No. 221



Figure A.16 Late Classic orange polychromes with glyphs from the Acropolis complex.



Acropolis: EZ-2G-28-3
Late Classic: Mo'
Saxche-Palmar Orange Polychrome
Decor. No. 168



Acropolis: EZ-3A-3-2
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 20

1 cm

Figure A.17 Late Classic orange polychromes with glyphs from the Acropolis complex.



Acropolis: EZ-12J-5-4
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 73



Acropolis: EZ-12J-4-5
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 69

1 cm

Figure A.18 Late Classic orange polychromes with likely glyphs or pseudoglyphs from the Acropolis complex.



Acropolis: EZ-2G-28-3
Late Classic: Mo'
Saxche-Palmar Orange Polychrome
Decor. No. 145



Acropolis: EZ-2H-5-5
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 215



Acropolis: EZ-2G-28-1
Late Classic: Mo'
Saxche-Palmar Orange Polychrome
Decor. No. 148

1 cm

Figure A.19 Late Classic orange polychromes with geometric motifs (step-fret motif) from the Acropolis complex.



Acropolis: EZ-2A-7-1
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 104



Acropolis: EZ-2G-24-4
Late Classic: Mo'
Saxche-Palmar Orange Polychrome
Decor. No. 146

1 cm

Figure A.20 Late Classic orange polychromes with geometric motifs (step-fret motif) from the Acropolis complex.



Acropolis: EZ-2G-26-7
Late Classic: Mo'
Zacatal Cream Polychrome
Decor. No. 225



Acropolis: EZ-2G-25-5
Late Classic: Mo'
Zacatal Cream Polychrome
Decor. No. 226



Acropolis: EZ-2G-6-5
Late Classic: Mo'
Saxche-Palmar Orange
Polychrome
Decor. No. 115

1 cm

Figure A.21 Late Classic cream and orange polychromes with geometric motifs from the Acropolis complex.



Acropolis: EZ-2G-14-2
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 141



Acropolis: EZ-2G-24-2
Late Classic: Mo'
Saxche-Palmar Orange
Polychrome
Decor. No. 142



Acropolis: EZ-2G-24-1
Late Classic: Mo'
Saxche-Palmar Orange
Polychrome
Decor. No. 143

1 cm

Figure A.22 Late Classic orange polychromes with geometric motifs (triangular motif) from the Acropolis complex.



Acropolis: EZ-2A-7-2
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 174



Acropolis: EZ-2G-24-6
Late Classic: Mo'
Saxche-Palmar Orange
Polychrome
Decor. No. 177



Acropolis: EZ-2G-26-2
Late Classic: Mo'
Saxche-Palmar Orange
Polychrome
Decor. No. 176



Acropolis: EZ-2G-23-6
Late Classic: Mo'
Saxche-Palmar Orange
Polychrome
Decor. No. 175



Acropolis: EZ-2G-18-4
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 117



Figure A.23 Late Classic orange polychromes with geometric motifs and potentially more complex design, from the Acropolis complex.



Acropolis: EZ-2G-19-3
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 120



Acropolis: EZ-2G-18-3
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 116



Acropolis: EZ-2G-14-3
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 113

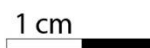


Figure A.24 Late Classic orange polychromes with geometric motifs (potentially more complex) from the Acropolis complex.



Acropolis: EZ-2G-19-3
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 118



Acropolis: EZ-2G-21-4
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 121



Acropolis: EZ-2H-5-8
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 250

1 cm

Figure A.25 Late Classic orange polychromes with geometric motifs from the Acropolis complex.



Acropolis: EZ-2G-19-3
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 119



Acropolis: EZ-2G-21-4
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 122



Group K: EZ-10P-1-3
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 53

1 cm

Figure A.26 Late Classic orange polychromes with geometric motifs from the Acropolis complex.



Acropolis: EZ-2G-21-4
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 123



Acropolis: EZ-2G-14-4
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 114



Acropolis: EZ-2G-14-3
Late Classic: Caal
Saxche-Palmar Orange
Polychrome
Decor. No. 204

1 cm

Figure A.27 Late Classic orange polychromes with geometric motifs from the Acropolis complex.



Acropolis: EZ-2G-21-4
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 149



Acropolis: EZ-2G-21-2
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 150



Acropolis: EZ-2G-18-3
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 152



Acropolis: EZ-2G-19-5
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 153



Acropolis: EZ-2G-20-1
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 151



Acropolis: EZ-2G-19-1
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 154

1 cm

Figure A.28 Late Classic orange polychromes with geometric motifs (jaguar spot motif) from the Acropolis complex.



Acropolis: EZ-2G-20-2
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 161



Acropolis: EZ-2G-21-4
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 159



Acropolis: EZ-2G-21-6
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 156



Acropolis: EZ-2G-24-7
Late Classic: Mo'
Saxche-Palmar Orange Polychrome
Decor. No. 155



Acropolis: EZ-2G-21-4
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 158

1 cm

Figure A.29 Late Classic orange polychromes with geometric motifs (jaguar spot motif) from the Acropolis complex.



Acropolis: EZ-2A-7-1
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 104



Bejucal: BL-2F-1-1
Late Classic: Caal
Zacatal Polychrome

1 cm

Figure A.30 Late Classic orange polychromes with geometric motifs (jaguar spot motif) from the Acropolis complex and Bejucal site.



Acropolis: EZ-2G-21-2
Late Classic: Caal
Saxche-Palmar Orange Polychrome
Decor. No. 164

1 cm

Figure A.31 Late Classic orange polychrome with geometric motifs (jaguar spot motif) from the Acropolis complex.



Acropolis: EZ-2A-10-2
Late Classic: Mo'/Caal
Saxche-Palmar Orange
Polychrome: Resist-Reserve
Decor. No. 100



Acropolis: EZ-2H-5-7
Late Classic: Caal
ND Black on Orange
Bichrome: Resist-Reserve
Decor. No. 102

1 cm

Figure A.32 Late Classic orange and red polychromes with resist-reserve decoration from the Acropolis complex.



Acropolis: EZ-2F-2-12
 Early Classic: Saquij II
 ND Orange Polychrome: Resist-Reserve
 Decor. No. 101



Acropolis: EZ-2G-28-3
 Late Classic: Mo'
 Saxche-Palmar Orange Polychrome: Resist-Reserve
 Decor. No. 168

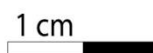


Figure A.33 Late Classic orange polychromes with resist-reserve decoration from the Acropolis complex.



El Zotz: Unknown Context
Late Classic: Caal
Zacatal Cream Polychrome

1 cm

Figure A.34 Late Classic cream polychrome with geometric motifs (including step-fret motif) from an unknown location at El Zotz.



El Zotz: Unknown Context
Late Classic: Caal
Zacatal Cream Polychrome

1 cm

Figure A.35 Late Classic cream polychrome with geometric motifs (including jaguar spot motif) from an unknown location at El Zotz.



Acropolis: EZ-2H-5-7
Late Classic: Caal
Zacatal Cream Polychrome
Decor. No. 234



Acropolis: EZ-2H-5-8
Late Classic: Caal
Zacatal Cream Polychrome
Decor. No. 254

1 cm

Figure A.36 Late Classic cream polychromes with geometric motifs from the Acropolis complex.



Acropolis: EZ-3A-3-2
Late Classic: Caal
Zacatal Cream Polychrome
Decor. No. 45



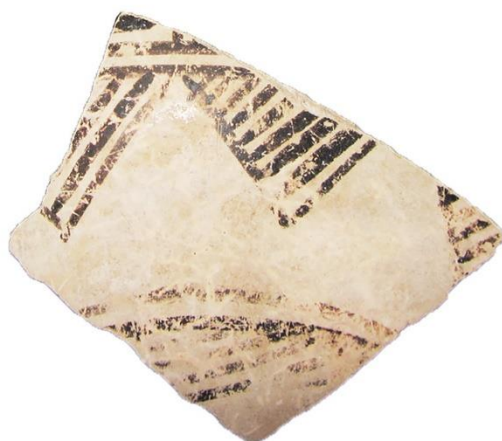
Acropolis: EZ-2H-5-8
Late Classic: Caal
Zacatal Cream Polychrome
Decor. No. 238

1 cm

Figure A.37 Late Classic cream polychromes with geometric motifs from the Acropolis complex.



Acropolis: EZ-3A-1-1
Late Classic: Caal
Zacatal Cream Polychrome
Decor. No. 31



Acropolis: EZ-2H-5-8
Late Classic: Caal
Chinos Black on Orange
Bichrome
Decor. No. 33

1 cm

Figure A.38 Late Classic cream polychromes with geometric motifs from the Acropolis complex.



Acropolis: EZ-2H-5-4
Terminal Classic: Cucul
Zacatal Cream Polychrome
Decor. No. 241



Acropolis: EZ-2H-5-4
Terminal Classic: Cucul
Zacatal Cream Polychrome
Decor. No. 242

1 cm

Figure A.39 Terminal Classic cream polychromes with geometric motifs from the Acropolis complex.



Acropolis: EZ-3X-2-2
Terminal Classic: Cucul
Palmar Orange Polychrome
Decor. No. 32

1 cm

Figure A.40 Terminal Classic orange polychrome with mythical scene motif from the Acropolis complex.



Acropolis: EZ-2G-2-2
Terminal Classic: Cucul
Palmar Orange Polychrome
Decor. No. 96

1 cm

Figure A.41 Terminal Classic orange polychrome with geometric (linear) motif from the Acropolis complex.



Acropolis: EZ-2H-3-4
Terminal Classic: Cucul
Palmar Orange Polychrome
Decor. No. 99

1 cm

Figure A.42 Terminal Classic orange polychrome with geometric motifs from the Acropolis complex.



Acropolis: EZ-2H-5-4
Terminal Classic: Cucul
Palmar Orange Polychrome
Decor. No. 240



Acropolis: EZ-2G-2-2
Terminal Classic: Cucul
Zacatal Cream Polychrome
Decor. No. 228

1 cm

Figure A.43 Terminal Classic orange and cream polychromes with geometric motifs from the Acropolis complex.



Acropolis: EZ-2G-12-10
Terminal Classic: Cucul
Portia Gouged-Incised



Acropolis: EZ-2G-12-10
Terminal Classic: Cucul
Portia Gouged-Incised

1 cm

Figure A.44 Terminal Classic red gouged-incised vessel fragments with complex motifs from the Acropolis complex.



Acropolis: EZ-2H-3-4
Terminal Classic: Cucul
Sahcaba Molded-Carved



Acropolis: EZ-4I-7-3
Terminal Classic: Cucul
Sahcaba Molded-Carved



Acropolis: EZ-2H-4-3
Terminal Classic: Cucul
Sahcaba Molded-Carved



Acropolis: EZ-2H-3-4
Terminal Classic: Cucul
Sahcaba Molded-Carved

Acropolis: EZ-12K-3-4
Terminal Classic: Cucul
Trapiche Incised (Fine Orange)

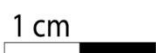


Figure A.45 Examples of Terminal Classic molded-carved vessel fragments recovered from the Acropolis complex and a Fine Orange incised fragment from Group K complex.



Figure A.46 Examples of Terminal Classic Fine Orange and Fine Grey vessel fragments recovered from the Acropolis, Las Palmitas complexes and from El Zotz domestic areas.



Acropolis: EZ-4H-2-2
Terminal Classic: Cucul
Sahcaba Molded-Carved

1 cm

Figure A.47 Terminal Classic red-slipped molded-carved vessel fragment with complex scene (including human figures) from Las Palmitas complex.



Acropolis: EZ-2G-2-2
Terminal Classic: Cucul
Pabellon Molded-Carved
(Fine Orange)



Acropolis: EZ-2F-3-2
Terminal Classic: Cucul
Sahcaba Molded-Carved

1 cm

Figure A.48 Examples of Terminal Classic red-slipped molded-carved vessels using fine paste and non-fine paste, from the Acropolis complex.



Acropolis: EZ-2J-3-1
Early Classic: Saquij II
Urita Gouged-Incised



Acropolis: EZ-2J-3-1
Early Classic: Saquij II
Lucha Incised



Acropolis: EZ-2F-1-7
Early Classic: Saquij I
Lucha Incised

1 cm

Figure A.49 Early Classic incised and gouged-incised black-slipped vessels from the Acropolis complex.



El Diablo: EZ-5X-2-1
Early Classic: Saquij I
Urita Gouged-Incised/
ND Appliqué



El Diablo: EZ-5X-2-1
Early Classic: Saquij I
Urita Gouged-Incised/
ND Appliqué



Acropolis: EZ-2J-3-1
Early Classic: Saquij II
Pucte: ND Appliqué-Impressed-Incised

1 cm

Figure A.50 Early Classic black and brown-slipped vessels decorated with more than two techniques from El Diablo and Acropolis complexes.



Acropolis: EZ-2J-3-1
Early Classic: Saquij II
Urita Grouged- Incised



Acropolis: EZ-2J-3-1
Early Classic: Saquij II
Lucha Incised



Acropolis: EZ-2J-3-1
Early Classic: Saquij II
Balanza: ND Modelled-Incised

1 cm



 A scale bar indicating 1 cm. It consists of a horizontal line with a black segment on the right and a white segment on the left.

Figure A.51 Early Classic black-slipped decorated vessel fragments from the Acropolis complex.



Acropolis: EZ-2F-3-6
Early Classic: Saquij II
Lucha Incised



Acropolis: EZ-2F-3-6
Early Classic: Saquij II
Lucha Incised



El Diablo: EZ-5X-2-1
Early Classic: Saquij I
Santa Teresa Incised

1 cm




Figure A.52 Early Classic black and brown-slipped incised vessel fragments from El Diablo and Acropolis complexes.



El Diablo: EZ-5D-1-3
Early Classic: Saquij II
Urita Gouged-Incised

1 cm

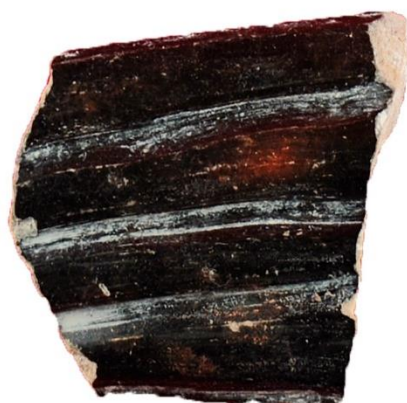
Figure A.53 Example of Early Classic black-slipped gouged-incised vessel with complex motif (possibly glyphs) from El Diablo complex.



Acropolis: EZ-2G-2-2
Terminal Classic: Cucul
Carmelita Incised



Acropolis: EZ-2G-21-3
Late Classic: Caal
Calabazo Gouged-Incised



Acropolis: EZ-2H-5-7
Late Classic: Caal
Carmelita Incised



Figure A.54 Examples of Late and Terminal Classic black-slipped vessels with incised and gouged-incised decoration from the Acropolis complex.



Group K: EZ-10P-1-3
Late Classic: Caal
Toro Gouged-Incised



Acropolis: EZ-2G-4-5
Terminal Classic: Cucul
Calabazo Gouged-Incised

1 cm

Figure A.55 Late and Terminal Classic gouged incised types on black-slipped and brown-slipped vessels from Group K and Acropolis complexes.



Acropolis: EZ-2G-4-5/6-4
Terminal Classic: Cucul
Calabazo Gouged-Incised

Figure A.56 Terminal Classic gouged-incised brown-slipped vessel with complex motif from the Acropolis complex.



Figure A.57 Terminal Classic black-slipped gouged-incised vessel fragments from the Acropolis complex.



Acropolis: EZ-2H-3-4
Terminal Classic: Cucul
Carmelita Incised



Figure A.58 Terminal Classic black-slipped incised vessel fragment with linear motif from the Acropolis complex.



Acropolis: 2G-6-4
Terminal Classic: Cucul
Carmelita Incised

1 cm

Figure A.59 Terminal Classic black-slipped incised vessel fragment with geometric motif from the Acropolis complex.



El Diablo: EZ-5M-4-2
Early Classic: Saquij I
Aguila Orange

1 cm

Figure A.60 Early Classic orange-slipped undecorated vessel fragment from El Diablo complex.



Acropolis: EZ-2A-15-2
Early Classic: Saquij I
Aguila Orange



Acropolis: EZ-2A-16-2
Early Classic: Saquij I
Aguila Orange



Figure A.61 Early Classic orange-slipped undecorated vessel fragments from the Acropolis complex.



Acropolis: EZ-2G-28-1
Late Classic: Mo'
Chaquiste Impressed



Acropolis: EZ-2G-26-5
Late Classic: Mo'
Chaquiste Impressed

1 cm

Figure A.62 Late Classic Chaquiste Impressed vessel fragments from the Acropolis complex.



Acropolis: EZ-2A-8-1
Late Classic: Caal
Chaquiste Impressed

1 cm

Figure A.63 Late Classic Chaquiste Impressed vessel fragment from the Acropolis complex.



Acropolis: EZ-2G-20-2
Late Classic: Caal
Azote Orange

1 cm

Figure A.64 Late Classic orange-slipped undecorated vessel fragment from the Acropolis complex.



Acropolis: EZ-2H-4-4
Terminal Classic: Cucul
Chinja Impressed



Acropolis: EZ-2H-4-4
Terminal Classic: Cucul
Chinja Impressed

1 cm

Figure A.65 Terminal Classic Chinja Impressed vessel fragment from the Acropolis complex.



Acropolis: EZ-2F-3-2
Terminal Classic: Cucul
Tolla Channelled



Acropolis: EZ-2G-8-3
Terminal Classic: Cucul
Camarón Incised

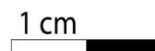


Figure A.66 Terminal Classic red-slipped incised and channelled vessel fragments from the Acropolis complex.



Acropolis: EZ-2G-6-4
Terminal Classic: Cucul
Tolla Channelled

Figure A.67 Terminal Classic red-slipped channelled fragment of a tecomate vessel from the Acropolis complex.



Figure A.68 Terminal Classic red-slipped incised fragment of a vessel with signs of burning on the exterior, from the Acropolis complex.



Acropolis: EZ-2F-3-2
Terminal Classic: Cucul
Tinaja Red



Acropolis: EZ-2H-3-4
Terminal Classic: Cucul
Tinaja Red



Figure A.69 Terminal Classic red-slipped undecorated vessel fragments from the Acropolis complex.



Acropolis: EZ-2H-3-4
Terminal Classic: Cucul
Tinaja Red: Orange

1 cm

Figure A.70 Terminal Classic orange variety of a Tinaja Red vessel fragment from the Acropolis complex.



Acropolis: EZ-2G-6-4
Terminal Classic: Cucul
Tinaja Red

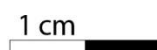


Figure A.71 Terminal Classic red-slipped undecorated vessel fragment from the Acropolis complex.



Figure A.72 Late Classic red-slipped undecorated vessel fragment with signs of burning on the interior, from the Acropolis complex.



Acropolis: EZ-2H-3-4
Terminal Classic: Cucul
Tinaja Red: Orange

1 cm

Figure A.73 Terminal Classic red-slipped undecorated vessel fragment with signs of burning on the interior, from the Acropolis complex.



Acropolis: EZ-2H-5-4
Terminal Classic: Cucul
Tinaja Red

1 cm

Figure A.74 Terminal Classic red-slipped undecorated vessel fragment with signs of burning on the interior, from the Acropolis complex.



Acropolis: EZ-2G-2-2
Terminal Classic: Cucul
Infierno Black

1 cm

Figure A.75 Semi-complete black-slipped undecorated bowl from the Terminal Classic special deposit at the Acropolis complex.



Acropolis: EZ-2G-6-4
Terminal Classic: Cucul
Infierno Black

1 cm

Figure A.76 A large fragment of a black-slipped undecorated vessel with pedestal base from the Terminal Classic special deposit at the Acropolis complex.



Acropolis: EZ-2G-6-4
Terminal Classic: Cucul
Tinjaja Red: Orange

1 cm

Figure A.77 Semi-complete red-slipped (orange variety) undecorated vase from the Terminal Classic special deposit at the Acropolis complex.



Acropolis: EZ-2G-6-4
Terminal Classic: Cucul
Tinaja Red: Orange

1 cm

Figure A.78 A large fragment of a red-slipped (orange variety) undecorated vessel with from the Terminal Classic special deposit at the Acropolis complex.



Acropolis: EZ-2F-2-11
Early Classic: Saquij II
Triunfo Striated

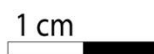


Figure A.79 Early Classic unslipped striated vessel fragment from the Acropolis complex.



Acropolis: EZ-2F-3-6
Early Classic: Saquij II
Quintal Unslipped



Figure A.80 Early Classic unslipped vessel fragment from the Acropolis complex.



Acropolis: EZ-2F-3-5
Early Classic: Saquij II
Quintal Unslipped

1 cm

Figure A.81 Early Classic unslipped vessel fragment from the Acropolis complex.



Acropolis: EZ-2G-15-6
Late Classic: Caal
Cambio Unslipped



Acropolis: EZ-2G-15-4
Late Classic: Caal
Cambio Unslipped



Acropolis: EZ-2G-28-1
Late Classic: Mo'
Cambio Unslipped

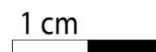


Figure A.82 Late Classic unslipped vessel fragments from the Acropolis complex.



Acropolis: EZ-2G-21-1
Late Classic: Caal
Cambio Unslipped



Acropolis: EZ-2G-7-4
Terminal Classic: Cucul
Cambio Unslipped



Acropolis: EZ-2G-25-5
Late Classic: Mo'
Cambio Unslipped

1 cm

Figure A.83 Late and Terminal Classic unslipped vessel fragments from the Acropolis complex.



Acropolis: EZ-2H-3-4
Terminal Classic: Cucul
Encanto Striated



El Diablo: 5M-4-2
Early Classic: Saquij I
Triunfo Striated: Impressed

1 cm

Figure A.84 Late Classic unslipped striated vessel fragment from the Acropolis complex and Early Classic unslipped striated and impressed fragment from El Diablo complex.



Acropolis: EZ-2G-14-5
Late Classic: Caal
Encanto Striated

1 cm

Figure A.85 Late Classic unslipped striated vessel fragment from the Acropolis complex.



Acropolis: EZ-2G-2-2
Terminal Classic: Cucul
Ciro Incised



Figure A.86 Terminal Classic partially complete bowl of unslipped incised type from the Acropolis special deposit.

APPENDIX B. Radiocarbon Dates Calibrated for Samples from the Acropolis, El Diablo and Las Palmitas complexes

Table B.1 Summary of radiocarbon dates for samples from the El Zotz Acropolis, El Diablo and Las Palmitas; BetaCal 3.10, calibrated by Beta Analytic Radiocarbon Dating Laboratory, database used: INTCAL13.

Laboratory number	Sample Number	Complex	Calibrated date (probability)	Calibrated date 2 (probability)	Conventional radiocarbon age
Beta-250882	EZ3B163	Acropolis	AD 1426-1524 (71.9%)	1558-1632 AD (23.5%)	410 ± 40 BP
Beta-250883	EZ3B187	Acropolis	AD 672-879 (95.4%)	--	1250 ± 40 BP
Beta-265818	EZ-2A-13-3	Acropolis	AD 410-583 (95.4%)	--	1560 ± 40 BP
Beta-265819	EZ-2G-2-2	Acropolis	AD 774-978 (95.4%)	--	1150 ± 40 BP
Beta-265820	EZ-2G-4-5	Acropolis	AD 776-990 (95.4%)	--	1130 ± 40 BP
Beta-265822	EZ-5B-7-2	El Diablo	AD 402-572 (95.4%)	--	1570 ± 40 BP
Beta-265823	EZ-5B-8-1	El Diablo	AD 332-538 (94.6%)	AD 266-271 (0.8%)	1640 ± 40 BP
Beta-288298	EZ-2G-7-8	Acropolis	AD 325-475 (77.6%)	AD 484-536 (14.2%)	1650 ± 40 BP
Beta-288299	EZ-2G-23-3	Acropolis	AD 532-650 (88.4%)	AD 433-457 (3.6%)	1480 ± 40 BP
Beta-288300	EZ-2H-5-8	Acropolis	AD 680-881 (95.4%)	--	1240 ± 40 BP
Beta-288301	EZ-2H-9-3	Acropolis	AD 687-895 (93.7%)	AD 928-940 (1.7%)	1210 ± 40 BP
Beta-288302	EZ-4F-11-3	Las Palmitas	AD 947-1051 (76.5%)	AD 1082-1128 (11.4%)	1020 ± 40 BP
Beta-288303	EZ-5B-29-V13B	El Diablo	AD 240-410 (95.4%)	--	1710 ± 40 BP
Beta-288304	EZ-5J-4-2	El Diablo	AD 252-430 (90.7%)	AD 492-530 (4.7%)	1670 ± 40 BP
Beta-433095	EZ-5B-30-2	El Diablo	AD 338-428 (94.9%)	AD 498-502 (0.5%)	1650 ± 40 BP
Beta-433097	EZ-5B-36-1	El Diablo	AD 316-400 (74.8%)	AD 256-300 (20.6%)	1700 ± 40 BP

APPENDIX C. Ceramic Raw Data from the El Zotz Sample

Two ceramic data tables – ‘Type-Variety Sample’ and ‘Decorative Sample’ – are supplied on a CD-ROM attached to this thesis.